



**Eurex High-Frequency Access**  
*Streamlined Interfaces for  
Trading, Risk and Trade  
Management and Market Data*

e u r e x



Eurex Frankfurt AG  
Neue Börsenstraße 1  
60487 Frankfurt/Main  
Germany

Eurex Zürich AG  
Selnastrasse 30  
8021 Zurich  
Switzerland

[www.eurexchange.com](http://www.eurexchange.com)

## **Content**

---

- 02 **Eurex Technology Roadmap**
- 04 **Interfaces to Access Eurex**
  - 05 *Enhanced Broadcast Solution*
  - 06 *Enhanced Transaction Solution*
  - 07 *Enhanced Risk Solution*
  - 08 *Enhanced Confirmation Solution*
- 09 **Guidelines for Data Lines**
- 10 *Configuration Costs*
- 11 **Contacts**

## Eurex Technology Roadmap

Eurex Exchange was a major driver of the trend towards electronic trading and today continues to set the standard in fully electronic trading and clearing. The exchange anticipates future developments in technology by constantly optimizing the Eurex® system to accelerate trading speed and throughput, upgrading system capacity, enhancing real-time information distribution and improving interfaces.

Through its technology roadmap, Eurex addresses the latest developments in electronic trading and clearing. Examples of enhancements already introduced are the deployment of the popular optional market data, high-frequency trading and risk interfaces, Enhanced Broadcast Solution, Enhanced Transaction Solution and Enhanced Risk Solution. In combination with various software features, these measures have further improved system performance substantially.

Building on the success of its optional interfaces, Eurex has developed a new interface: the Enhanced Confirmation Solution. With this offer, the Exchange gives members a consolidated overview of their recoverable order, trade and matching event information at a member level. The Enhanced Confirmation Solution will allow the Exchange to phase out the MISS architecture mid term in favor of technology solutions that meet the needs of high-frequency and other users in the front office area.

Eurex's cutting-edge interfaces provide a number of benefits to users, namely increased customization, hardware independence, and flexibility.

### Proximity Services

Eurex members can also choose to connect via Proximity Services. Primarily aimed at high-frequency traders, Proximity Services permit a member to place its servers in a data center located in Frankfurt close to the Exchange's matching engine, giving customers added advantages:

- Ultra low-latency access
- Lowest round-trip times due to the short distance
- Availability of more than 99.997 percent

Approximately 150 Eurex members are already taking advantage of Proximity Services, which underlines the importance of low-latency connectivity in today's trading environment. Daily average round-trip times of futures orders for Eurex members located in Proximity Services now average approximately 1.5–2 milliseconds.

For further information on Proximity Services, please visit: [www.eurexchange.com](http://www.eurexchange.com) > **Technology**

## Interfaces to Access Eurex

In order to meet your demand for streamlined access, Eurex Group designs interfaces that provide you with high-performance, low-latency access to market data, order management as well as risk and position information:

- The **Enhanced Transaction Solution** offers high-speed access for core trading activities; focus is on order and quote maintenance functions.
- The **Enhanced Broadcast Solution** provides access to un-netted market data in real-time and with comprehensive market depth.
- The **Enhanced Risk Solution** allows members to receive and inquire about their intraday, and where applicable, end-of-day risk and position data.
- The **Enhanced Confirmation Solution** enables members to receive recoverable order, trade and matching event information without the need to use a MISS.

Member firms are actively adopting the use of Eurex's interfaces. In fact, by mid 2010, between 60 and 70 percent of all options orders and quotes and between 80 and 90 percent of all futures orders entered were using the Enhanced Transaction Solution.

### Interface Characteristics at a Glance

<b>Enhanced Transaction Solution (High-frequency Trading Interface)</b>	<ul style="list-style-type: none"> <li>• Low latency trading access to Eurex via a FIX-like interface</li> <li>• Easy to integrate into existing IT infrastructure; no operating system, hardware, or programming language requirements</li> <li>• Reduction of round-trip time to under 2.5 milliseconds (from proximity facility in Frankfurt)</li> </ul>
<b>Enhanced Broadcast Solution (Market Data Interface)</b>	<ul style="list-style-type: none"> <li>• Optional low latency, un-netted public IP Multicast market data broadcast using FAST compression</li> <li>• Order book depth up to 20 deep for all benchmark futures products and up to 5 deep for all other futures and options products (futures spreads included)</li> <li>• Easy to integrate into existing IT infrastructure; no operating system, hardware, or programming language requirements</li> </ul>
<b>Enhanced Risk Solution (Risk Data Interface)</b>	<ul style="list-style-type: none"> <li>• Offers distribution of real-time risk data for derivatives products cleared by Eurex Clearing</li> <li>• Two-way socket interface used by member to receive and inquire its intraday and end-of-day risk and position data</li> <li>• Uses new FIXML-based connection over new industry standard AMQP transport</li> <li>• Easy to integrate into existing IT infrastructure; no operating system, hardware, or programming language requirements</li> </ul>
<b>Enhanced Confirmation Solution (Order and Matching Event Interface)</b>	<ul style="list-style-type: none"> <li>• Two-way socket interface used by a member to receive recoverable order, trade and matching event information</li> <li>• Message-based, session-oriented, open interface</li> <li>• Own gateway to prevent performance impact</li> <li>• Easy to integrate into existing IT infrastructure; no operating system, hardware, or programming language requirements</li> </ul>

### Enhanced Transaction Solution

This interface gives members 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 to the system and continues until the connection to the system 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 (at present a maximum of 25), depending on his technical requirements.

### Overview: Available Trading Functionality

- Enter, modify, inquire and delete orders (persistent and non-persistent)<sup>1</sup> and quotes for:
  - Options (single leg)
  - Futures (single leg and double)
  - Futures time spreads
  - 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
- Session logon/logoff
- Trader login/logout.

### Enhanced Broadcast Solution

---

The Enhanced Broadcast Solution is a high-performance, market data broadcast interface. This service features the dissemination of un-netted public market data using a radio paradigm (clients can only listen to the market data provided but not inquire).

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, which includes reporting of single, double leg and strategy trades for on-exchange as well as off-exchange transactions.

To cater to individual data requirements supported by the subscription model, Eurex offers a wide range of bandwidth connections. Member applications can be programmed to display any order book depth up to the maximum level distributed by the exchange.

### Enhanced Risk Solution

---

Eurex Clearing, the leading European clearing house for securities and derivatives transactions, is the only clearing house worldwide that provides its members with real-time risk and position data.

The Enhanced Risk Solution lets members listen to their intraday, and where applicable, end-of-day risk and position data. This interface uses FIXML-based messages over the new industry standard Advanced Message Queuing Protocol (AMQP).

For all member types, including NCMs, that already have developed in-house risk management systems, the Enhanced Risk Solution provides an important additional tool, which they can use either independently or in conjunction with their existing in-house risk management systems to monitor their risk exposure. In addition, the Enhanced Risk Solution enables enhanced treasury management, making collateral and cash management more efficient.

<sup>1</sup> By using so-called "order attributes", members can select whether their orders will be backed up in the event of a system failure. They can choose between a persistent order that will stay in the order book after a trading interruption whereas a non-persistent order will be deleted automatically.

## Guidelines for Data Lines

### Enhanced Confirmation Solution

With Eurex Release 13.0, Eurex adds to its popular optional connectivity interfaces. The Enhanced Confirmation Solution gives members the ability to receive order, trade and matching event information independent of the MISS architecture.

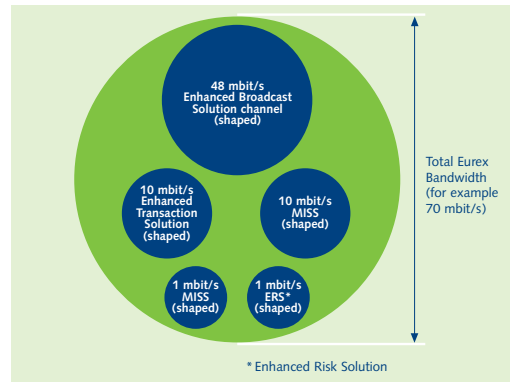
The new, FIX-compatible interface is based on similar technology and concepts to Eurex's Enhanced Transaction Solution interface. Like Eurex Group's other high-frequency interfaces, the Enhanced Confirmation Solution is designed to be faster, as well as easier to develop and maintain vis-à-vis the MISS architecture. Members benefit from additional flexibility, as Eurex Exchange lists no requirements in terms of operating system, programming language or compilers.

Members will be able to subscribe to streams using a new broadcast session, just as they were able to subscribe to the streams via the MISS. A retransmission service will allow any missing data to be re-requested. The following streams will be available:

- Recoverable Single Leg Order Confirmation
- Recoverable Double Leg Order Confirmation
- Recoverable Strategy Order Confirmation
- Recoverable Trade Confirmation
- Recoverable Single Leg Matching Events Confirmation
- Recoverable Double Leg Matching Events Confirmation
- Recoverable Strategy Matching Events Confirmation.

In order to provide members with greater flexibility and efficiency in managing the variety of connections that are available, Eurex Group offers its members an extended connection portfolio. This enables you to consolidate MISS/VALUES API and optional interfaces on one physical connection. In order to lower infrastructure costs, several logical channels can be defined on a high bandwidth connection.

### Sample Configuration



When selecting the bandwidth necessary to suit their individual requirements, members should consider the following framework:

- A physical line can contain only one logical Enhanced Transaction Solution channel, one Enhanced Broadcast Solution channel, one Enhanced Risk Solution and one Enhanced Confirmation Solution channel.

In the given sample configuration:

- The Enhanced Broadcast Solution channel must have a bandwidth of at least 10 mbit/s.
- The Enhanced Risk Solution channel must have a bandwidth of 1 mbit/s.
- MISS and Enhanced Transaction Solution channels can have a bandwidth of 1 mbit/s or 10 mbit/s.
- The Enhanced Confirmation Solution channels can have a bandwidth of 1 mbit/s or 10 mbit/s. Alternatively, it can share existing Enhanced Transaction Solution connectivity.
- For failover purposes two high bandwidth connections with an identical configuration must be ordered.

## **Configuration Costs**

---

Pricing depends on many factors. For an optimal configuration we recommend to take the following aspects into consideration:

- Physical location
- Infrastructure
- Trading volume
- Trading style
- Choice of services
- Level of redundancy

## **Further Information**

For expert advice on your migration scenarios and pricing please contact your local customer support representative or visit [www.eurexchange.com](http://www.eurexchange.com).

## **Contacts**

### **Frankfurt**

Ruth Klaus  
T +49-69-211-14888  
[Ruth.Klaus@eurexchange.com](mailto:Ruth.Klaus@eurexchange.com)

### **Zürich**

Francesca Dell' Era  
T +41-58-854-2266  
[Francesca.DellEra@eurexchange.com](mailto:Francesca.DellEra@eurexchange.com)

### **London**

Catherine Patey  
T +44-20-78 62-7219  
[Catherine.Patey@eurexchange.com](mailto:Catherine.Patey@eurexchange.com)

### **Paris**

Ebru Ruffet  
T +33-1-5527-6772  
[Ebru.Ruffet@eurexchange.com](mailto:Ebru.Ruffet@eurexchange.com)

### **Chicago**

Christian Ochsner  
T +1-312-544-1055  
[Christian.Ochsner@eurexchange.com](mailto:Christian.Ochsner@eurexchange.com)

## **Customer Support Hotline**

T +49-69-211-11710  
E-mail: [customer.support.frankfurt@eurexchange.com](mailto:customer.support.frankfurt@eurexchange.com)

© Eurex 2010  
Deutsche Börse AG (DBAG), Clearstream Banking AG (Clearstream), Eurex Frankfurt AG, Eurex Clearing AG (Eurex Clearing) as well as Eurex Bonds GmbH (Eurex Bonds) and Eurex Repo GmbH (Eurex Repo) are corporate entities and are registered under German law. Eurex Zürich AG is a corporate entity and is registered under Swiss law. Clearstream Banking S.A. is a corporate entity and is registered under Luxembourg law. U.S. Exchange Holdings, Inc. and International Securities Exchange Holdings, Inc. (ISE) are corporate entities and are registered under U.S. American law. Eurex Frankfurt AG (Eurex) is the administering and operating institution of Eurex Deutschland and Eurex Zürich AG are in the following referred to as the "Eurex Exchanges".

All intellectual property, proprietary and other rights and interests in this publication and the subject matter hereof (other than certain trademarks and service marks listed below) are owned by DBAG and its affiliates and subsidiaries including, without limitation, all patent, registered design, copyright, trademark and service mark rights. While reasonable care has been taken in the preparation of this publication to provide details that are accurate and not misleading at the time of publication DBAG, Clearstream, Eurex, Eurex Clearing, Eurex Bonds, Eurex Repo as well as the Eurex Exchanges and their respective servants and agents (a) do not make any representations or warranties regarding the information contained herein, whether express or implied, including without limitation any implied warranty of merchantability or fitness for a particular purpose or any warranty with respect to the accuracy, correctness, quality, completeness or timeliness of such information, and (b) shall not be responsible or liable for any third party's use of any information contained herein under any circumstances, including, without limitation, in connection with actual trading or otherwise or for any errors or omissions contained in this publication.

This publication is published for information purposes only and shall not constitute investment advice respectively does not constitute an offer, solicitation or recommendation to acquire or dispose of any investment or to engage in any other transaction. This publication is not intended for solicitation purposes but only for use as general information. All descriptions, examples and calculations contained in this publication are for illustrative purposes only.

Eurex and Eurex Clearing offer services directly to members of the Eurex exchanges respectively to clearing members of Eurex Clearing. Those who desire to trade any products available on the Eurex market or who desire to offer and sell any such products to others or who desire to possess a clearing license of Eurex Clearing in order to participate in the clearing process provided by Eurex Clearing, should consider legal and regulatory requirements of those jurisdictions relevant to them, as well as the risks associated with such products, before doing so.

Eurex derivatives (other than EURO STOXX 50<sup>®</sup> Index Futures contracts, EURO STOXX<sup>®</sup> Select Dividend 30 Index Futures contracts, STOXX<sup>®</sup> Europe 50 Index Futures contracts, STOXX<sup>®</sup> Europe 600 Index Futures contracts, STOXX<sup>®</sup> Europe Large/Mid/Small 200 Index Futures contracts, EURO STOXX<sup>®</sup> Banks Futures contracts, STOXX<sup>®</sup> Europe 600 Banks/Industrial Goods & Services/Insurance/Media/Personal & Household Goods/Travel & Leisure/Utilities Futures contracts, Dow Jones Global Titans 50 Index<sup>SM</sup> Futures contracts, DAX<sup>®</sup> Futures contracts, MDAX<sup>®</sup> Futures contracts, TecDAX<sup>®</sup> Futures contracts, SMIM<sup>®</sup> Futures contracts, SLI Swiss Leader Index<sup>®</sup> Futures contracts, Eurex inflation/commodity/weather/property and interest rate derivatives) are currently not available for offer, sale or trading in the United States or by United States persons.

#### Trademarks and Service Marks

Buxl<sup>®</sup>, DAX<sup>®</sup>, DivDAX<sup>®</sup>, eb.rexx<sup>®</sup>, Eurex<sup>®</sup>, Eurex Bonds<sup>®</sup>, Eurex Repo<sup>®</sup>, Eurex Strategy Wizard<sup>SM</sup>, Euro GC Pooling<sup>®</sup>, FDAX<sup>®</sup>, FVB<sup>®</sup>, GC Pooling<sup>®</sup>, GCPI<sup>®</sup>, MDAX<sup>®</sup>, ODAX<sup>®</sup>, SDAX<sup>®</sup>, TecDAX<sup>®</sup>, USD GC Pooling<sup>®</sup>, VDAX<sup>®</sup>, VDAX-NEW<sup>®</sup> and Xetra<sup>®</sup> are registered trademarks of DBAG.

Phelix Base<sup>®</sup> and Phelix Peak<sup>®</sup> are registered trademarks of European Energy Exchange AG (EEX).

The service marks MSCI Russia and MSCI Japan are the exclusive property of MSCI Barra.

iTraxx<sup>®</sup> is a registered trademark of International Index Company Limited (IIC) and has been licensed for the use by Eurex. IIC does not approve, endorse or recommend Eurex or iTraxx<sup>®</sup> Europe 5-year Index Futures, iTraxx<sup>®</sup> Europe HiVol 5-year Index Futures and iTraxx<sup>®</sup> Europe Crossover 5-year Index Futures.

Eurex is solely responsible for the creation of the Eurex iTraxx<sup>®</sup> Credit Futures contracts, their trading and market surveillance. ISDA<sup>®</sup> neither sponsors nor endorses the product's use. ISDA<sup>®</sup> is a registered trademark of the International Swaps and Derivatives Association, Inc.

IPD UK Annual All Property Index is a registered trademark of Investment Property Databank Ltd. IPD and has been licensed for the use by Eurex for derivatives.

SLI<sup>®</sup>, SMI<sup>®</sup> and SMIM<sup>®</sup> are registered trademarks of SIX Swiss Exchange AG.

The STOXX<sup>®</sup> indexes, the data included therein and the trademarks used in the index names are the intellectual property of STOXX Limited and/or its licensors. Eurex derivatives based on the STOXX<sup>®</sup> indexes are in no way sponsored, endorsed, sold or promoted by STOXX and its licensors and neither STOXX nor its licensors shall have any liability with respect thereto.

Dow Jones, Dow Jones Global Titans 50 Index<sup>SM</sup> and Dow Jones Sector Titans Indexes<sup>SM</sup> are service marks of Dow Jones & Company, Inc. Dow Jones-UBS Commodity Index<sup>SM</sup> and any related sub-indexes are service marks of Dow Jones & Company, Inc. and UBS AG. All derivatives based on these indexes are not sponsored, endorsed, sold or promoted by Dow Jones & Company, Inc. or UBS AG, and neither party makes any representation regarding the advisability of trading or of investing in such products.

All references to London Gold and Silver Fixing prices are used with the permission of The London Gold Market Fixing Limited as well as The London Silver Market Fixing Limited, which for the avoidance of doubt has no involvement with and accepts no responsibility whatsoever for the underlying product to which the Fixing prices may be referenced.

PCS<sup>®</sup> and Property Claim Services<sup>®</sup> are registered trademarks of ISO Services, Inc.

Korea Exchange, KRX, KOSPI and KOSPI 200 are registered trademarks of Korea Exchange, Inc.

The names of other companies and third party products may be trademarks or service marks of their respective owners.



© October 2010

#### Published by

Eurex Frankfurt AG  
Neue Börsenstraße 1  
60487 Frankfurt/Main  
Germany

Eurex Zürich AG  
Selnaustrasse 30  
8021 Zurich  
Switzerland

[www.eurexchange.com](http://www.eurexchange.com)

#### Order Number

E5E-281-1010

#### ARBN Number

Eurex Frankfurt AG ARBN 100 999 764