X-pand into the Future

eurex circular 010/17

Date: 27 January 2017
Recipients: All Trading Participants of Eurex Deutschland and Eurex Zürich and Vendors
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Introduction of the Eurex Co-location 2.0 Service and related changes to Eurex Exchanges' connectivity fees (Price List)

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Content may be most important for:	**Attachments:**
➲ All departments	1. Price List to Connection Agreement Eurex Frankfurt AG (Connection Agreement) 2. Price List to Provider Connection Agreement Eurex Frankfurt AG (Provider Connection Agreement)

Summary

In order to improve the existing high-quality connectivity to their markets, Eurex Deutschland and Eurex Zürich (collectively the Eurex Exchanges) intend to implement two strategic milestones leading towards a state-of-the-art and more predictable technical infrastructure set-up in the course of 2017 and early 2018: **Co-location 2.0** and **First-in-First-out (FiFo) gateways**.

1. First milestone: Introduction of Co-location 2.0

The Co-location 2.0 Service will be implemented to ensure a state-of-the-art and more predictable technical infrastructure setup in the Eurex Exchanges' Co-location facility. The Co-location 2.0 service will be available for market data disseminated via the Eurex Market Data Interface (EMDI) and Eurex Enhanced Order Book Interface (EOBI) market data interfaces and also for transactions submitted via Eurex Enhanced Trading Interface (ETI). From **20 February 2017** onwards, connectivity to the Co-location 2.0 will be available for ordering via the Member Portal. The production start of the Co-location 2.0 service is planned to take place before the start of T7® Release 5.0, which is currently scheduled for **19 June 2017**. Changes to the Price List to the Agreement on the technical connection and the utilization of the Trading System of Eurex Deutschland and Eurex Zürich (Connection Agreement) and the Price List to the Agreement on the technical connection to the Electronic Trading EDP Eurex for a Provider of the Multi-Member-System (Provider Connection Agreement) incorporating the new service category will come into effect on **1 June 2017.**

2. Second milestone: Introduction of "First-in-First-out" (FiFo) gateways

The introduction of partition specific "First-in-First-out" (FiFo) gateways will lead to a more deterministic behaviour and will decrease the number of entry points into the trading system at gateway level. The introduction of the FiFo gateways is planned in a stepwise approach, whereby several measures will already be implemented with T7® Release 5.0 and T7® Release 6.0 (4 December 2017). The final implementation of the FiFo gateways is scheduled to be completed in **early 2018.**

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Introduction of the Eurex Co-location 2.0 Service and related changes to Eurex Exchange's connectivity fees (Price List)

Introduction

The Eurex Exchanges' strive to offer their Participants a performant and state-of-the-art technical infrastructure, including a connectivity landscape with minimised operational risks and increased predictability. In order to improve the existing high-quality connectivity to their markets, the Eurex Exchanges intend to implement two strategic milestones leading towards a state-of-the-art and more predictable technical infrastructure setup in their Co-location.

1. First milestone: Introduction of Co-Location 2.0

Co-location 2.0 will represent an improved, state-of-the-art Co-location service. The traffic via the new network architecture will become more predictable, with a reduction in complexity for the Eurex Exchanges and their Participants. The Eurex Exchanges will achieve this by reducing the number of access nodes to the trading system, thereby ensuring a more predictable access. The connection to all access nodes will be possible, independent of the Co-location room/module. In addition, better standardisation and more precise cable length will also be achieved. The implementation of the Co-location 2.0 service will also be accompanied by a refresh of the technology used. A more predictable connectivity landscape and a latency reduction can be expected for Co-location 2.0 compared to the current Co-location offering.

The Eurex Exchanges will introduce the Co-location 2.0 Service for the Eurex Market Data Interface (EMDI) and Eurex Enhanced Order Book Interface (EOBI) market data interfaces and in addition for the Eurex Enhanced Trading Interface (ETI).

The new connectivity options for the Co-location 2.0 service will be available for ordering via the Member Portal from 20 February 2017. Connections ordered before 17 March 2017 will be guaranteed to be operational in time for production launch of the Co-location 2.0 service. Subscription/use of the Co-location 2.0 service is optional and only available for Co-located 10 Gbit/s connectivity[1]. The production start for the Co-location 2.0 service is planned before T7® Release 5.0 (which is scheduled to go live on 19 June 2017). The existing Co-location service offering will remain unchanged.

For Trading Participants and Multi-Member-System Providers, the new Co-location 2.0 service will be added as a new service category to the current Price List to Connection Agreement Eurex Frankfurt AG and the Price List to Provider Connection Agreement Eurex Frankfurt AG, effective 1 June 2017. Therefore, all newly ordered connections activated in the course of June 2017 will be charged starting in July 2017.

[1] Here, Co-location refers to specific rooms in the Equinix FR2 data centre (located at Kruppstr. 121 – 127, DE- 60388 Frankfurt am Main, Co-location rooms/modules relevant for the launch will be: 1A2, 4.5, 5.04, 5.09, 5.11, 5.12 and 5.13. It is planned to list the exact modules on the Eurex Exchange website www.eurexchange.com under "Technology - Co-location services")

Service	Bandwidth (Mbit/s)	Fee per connection (EUR/month)							
		Co-Location (Equinix)	Leased Line in Tier A1	Leased Line in Tier A2	Leased Line in Tier B1	Leased Line in Tier B2	Leased Line in Tier C	Leased Line in Tier D	iAccess
Co-Location 2.0 Mkt. Data Eurex EMDI	**10,000**	5,000	-	-	-	-	-	-	-
Co-Location 2.0 Transaction Eurex ETI	**10,000**	5,000	-	-	-	-	-	-	-
Co-Location 2.0 Mkt. Data Eurex EOBI	**10,000**	6,000	-	-	-	-	-	-	-
Co-Location 2.0 Mkt.t Data Eurex EMDI & Eurex EOBI	**10,000**	7,000	-	-	-	-	-	-	-

2. Second Milestone: Introduction of “First-in-First-out” (FiFo) gateways

The second strategic milestone will be made with the introduction of partition specific “First-in-First-out” (FiFo) gateways. The FiFo gateways will be more predictable gateways and the number of entry points into the trading system at gateway level will be decreased. The introduction of the gateways is planned in a stepwise approach, whereby several measures will already be implemented with T7® Release 5.0 and T7® Release 6.0 (4 December 2017). The final implementation milestone of the FiFo gateways is scheduled to be completed in early 2018. The introduction of the FiFo gateways will also trigger an assessment of the current session concept. Information concerning the revised session concept will be communicated in the course of 2017.

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Price List to the Agreement on the technical connection and the utilization of the Trading System of Eurex Deutschland and Eurex Zürich (Connection Agreement)

1. Monthly fees for the technical connection to T7 (connection fees)

Service	Bandwidth (Mbit/s)	Fee per Connection (EUR/month)							
		Co-Location (Equinix)	Leased Line in Tier A1	Leased Line in Tier A2	Leased Line in Tier B1	Leased Line in Tier B2	Leased Line in Tier C	Leased Line in Tier D	iAccess
Eurex Multi-Interface Channel (MIC)	up to 5 [X1]	750	750	750	750	750	750	750	500 [X2]
	80	3,000	4,200	4,200	6,400	6,400	6,900	-	-
	260	4,000	5,400	-	8,000	-	R	-	-
	760	5,000	6,500	-	9,500	-	R	-	-
Co-Location Mkt. Data Eurex EMDI	10,000	4,500	-	-	-	-	-	-	-
Co-Location 2.0 Mkt. Data Eurex EMDI	10,000	5,000	-	-	-	-	-	-	-
Co-Location Mkt. Data Eurex EOBI	10,000	5,500	-	-	-	-	-	-	-
Co-Location 2.0 Mkt. Data Eurex EOBI	10,000	6,000	-	-	-	-	-	-	-
Co-Location Mkt. Data Eurex EMDI & Eurex EOBI	10,000	6,500	-	-	-	-	-	-	-
Co-Location 2.0 Mkt. Data Eurex EMDI & Eurex EOBI	10,000	7,000	-	-	-	-	-	-	-
Co-Location Transaction Eurex ETI	10,000	4,500	-	-	-	-	-	-	-
Co-Location 2.0 Transaction Eurex ETI	10,000	5,000	-	-	-	-	-	-	-
Eurex GUI-Channel (in combination with MIC)	1	40	60	R	100	R	110	-	-
	3	110	170	R	300	R	340	-	
	10	380	600	R	1,000	R	1,100	-	
	40	1,500	2,300	R	4,000	R	4,600	-	
Eurex GUI via Internet	n/a	300 [X3]							
Eurex GUI-only-	5	-	750	R	750	R	750	-	-

Channel (on lines without MIC)	**10**	-	900	R	1,600	R	1,800	-	
	40	-	2,300	R	4,000	R	4,600	-	

Service	**Bandwidth of used Installation (Mbit/s)**	**Fee per used Installation (EUR/month)**		
		Up to 2 Sessions	**3 to 6 Sessions**	**More than 6 Sessions**
Connection via Multi-Member System Provider X4	**up to 5** X1	0	0	0
	80-760	200	400	800
	10,000	400	800	1,600

Legend	
Tier A1	Metro areas of Amsterdam, Frankfurt, London, Milan, Paris, and Zurich
Tier A2	Metro areas of Chicago, New York, Hong Kong and Singapore
Tier B1	Germany, France, UK, The Netherlands, Austria and Switzerland
Tier B2	U.S.
Tier C	Belgium, Ireland, Italy, Luxembourg, Sweden, Spain, Portugal, Denmark and Finland
Tier D	Australia, Gibraltar and Greece
R and other Locations	Availability of high-bandwidth MIC (80 Mbit/s, 260 Mbit/s and 760 Mbit/s) and Eurex Trader GUI in other locations on request.
X1	• In the metro areas of Chicago, New York and in the U.S. only 1.5 Mbit/s is available. • In the metro areas of Hong Kong, Singapore, in Australia, Gibraltar and Greece only 2 Mbit/s is available.
X2	For Combined Access, the bandwidth of the iAccess connection will be aligned with the bandwidth of the associated leased line.
X3	GUI connection via internet is free of charge for participants with a MIC, a GUI-Channel, a 10 Gbit/s connection in Co-Location or if a connection via a service provider is used, otherwise the monthly charge of EUR 300/month applies (per participant, number of open Eurex Trader GUIs not limited)
X4	The participant is charged a fee for each installation of a Multi-Member-System Provider that can be used. The fee is determined by the provided bandwidth and the number of trading sessions registered per installation. If there are already fees paid for MICs, GUI-Channels and connections in Co-Location then no fees up to this amount will be charged for connecting via Multi-Member-System Providers. The connection via a Multi-Member-System Provider which is an affiliated company is exempted from this fee.
Remarks	• Tier prices are reference prices only and may vary depending on specific participant locations and technical feasibility. Prices for other locations on request. • 10 Gbit/s is available in specific Co-Location (Equinix) rooms only~~, not available in Colt proximity~~.

2. Monthly fees for the usage of the Trading System T7

Trading System Usage	Fee (EUR/month)
Eurex ETI Low Frequency Light Session (max. 50 Transactions/Second)	250
Eurex ETI High Frequency Light Session (max. 50 Transactions/Second)	250
Eurex ETI Low Frequency Full Session (max. 150 Transactions/Second)	500
Eurex ETI High Frequency Full Session (max. 150 Transactions/Second)	500
Eurex FIX Trading Session (max. 50 Transactions/Second)	250
Eurex FIX Back Office Session	100
Eurex ETI Back Office Session	100

Legend	
Remarks	Monthly fees for ETI- and FIX-Sessions are rebated with 100% up to a maximum of 1,000 € per month and Trading Participant.

3. Monthly fees for Market Signals

Market Signal	Entgelt (EUR/Monat)
Eurex IOC Liquidity Indicator for Options	2,500
Intraday Volatility Forecast	300
Risk Alerts	50

Legend	
Remarks	Any Market Signal can be ordered once per Trading Participant. A MIC or 10 Gbit/s connection is required.

4. Excessive System Usage Fee

For details regarding the methodology, please refer to § 4 (3) of the General Terms and Conditions of the Agreement on the technical connection and the utilization of the Exchange-EDP of Eurex Deutschland and Eurex Zürich (Connection Agreement).

4a) Parameters

For the calculation of the transaction limits there are different sets of parameters for the two limit-types “All Transactions” and “Standard Orders”.

For the limit-type “All Transactions” the following parameters are used:

Product Type	Grace Factor	Volume Factor	Non-MM Floor	Spread Quality	MM Base
OSTK FSTK	0.25	50	150,000	0.0	150,000
				0.2	300,000
				0.3	450,000
				0.4	600,000
FINX OFIX FVOL OINX FCUR OCUR	0.25	50	250,000	0.0	250,000
				0.2	500,000
				0.3	750,000
				0.4	1,000,000
FBND FINT OFBD OFIT	0.25	50	200,000	0.0	200,000
				0.2	300,000
				0.3	500,000
				0.4	1,000,000
New Asset Classes	0.25	50	250,000	0.0	250,000
				0.2	500,000
				0.3	750,000
				0.4	1,000,000

For the limit-type “Standard Orders” the following parameters are used:

Product Type	Grace Factor	Volume Factor	Non-MM Floor	Spread Quality	MM Base
OSTK FSTK	0.25	10	30,000	n/a	n/a
				n/a	n/a
				n/a	n/a
				n/a	n/a
FINX OFIX FVOL	0.25	10	50,000	n/a	n/a
				n/a	n/a
				n/a	n/a
OINX FCUR OCUR				n/a	n/a
FBND FINT OFBD OFIT	0.25	10	40,000	n/a	n/a
				n/a	n/a
				n/a	n/a
				n/a	n/a
New Asset Classes	0.25	10	50,000	n/a	n/a
				n/a	n/a
				n/a	n/a
				n/a	n/a

Parameters are assigned per product based on its unique product type which is published in the product overview on the Eurex website.

4b) Fee

The fee levels per exceeded transaction depend on the degree of the violation and are defined as follows:

Excessive System Usage Fee per exceeded transaction	With a violation of the transaction limit by
€ 0.05	50%
€ 0.10	50% - 100%
€ 0.25	> 100%

5. Maturity and further explanation

Fees will be charged monthly and become due by the third Business Day of the following calendar month.

Depending on the chosen connection component and the number of connection components chosen, monthly connectivity fees will be charged by Eurex Frankfurt AG.

The grand total of the monthly connection fees will be calculated by the sum of released connections of a Trading Participant, multiplied by the amount of the relevant price per connection component.

Price List to the Agreement on the technical connection to the Electronic Trading EDP Eurex for a Provider of the Multi-Member-System (Provider Connection Agreement)

1. Monthly fees for the technical connection to T7 (connection fees)

Service	Bandwidth (Mbit/s)	Fee per connection (EUR/month)							
		Co-Location (Equinix)	Leased Line in Tier A1	Leased Line in Tier A2	Leased Line in Tier B1	Leased Line in Tier B2	Leased Line in Tier C	Leased Line in Tier D	iAccess
Eurex Multi-Interface Channel (MIC)	up to 5 [X1]	750	750	750	750	750	750	750	500 [X2]
	80	3,000	4,200	4,200	6,400	6,400	6,900	-	-
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	760	5,000	6,500	-	9,500	-	R	-	-
Co-Location Mkt. Data Eurex EMDI	10,000	4,500	-	-	-	-	-	-	-
Co-Location 2.0 Mkt. Data Eurex EMDI	10,000	5,000	-	-	-	-	-	-	-
Co-Location Transaction Eurex ETI	10,000	4,500	-	-	-	-	-	-	-
Co-Location 2.0 Transaction Eurex ETI	10,000	5,000	-	-	-	-	-	-	-
Co-Location Mkt. Data Eurex EOBI	10,000	5,500	-	-	-	-	-	-	-
Co-Location 2.0 Mkt. Data Eurex EOBI	10,000	6,000	-	-	-	-	-	-	-
Co-Location Mkt. Data Eurex EMDI & Eurex EOBI	10,000	6,500	-	-	-	-	-	-	-
Co-Location 2.0 Mkt. Data Eurex EMDI & Eurex EOBI	10,000	7,000	-	-	-	-	-	-	-
Eurex GUI-Channel (in combination with MIC)	1	40	60	R	100	R	110	-	-
	3	110	170	R	300	R	340	-	
	10	380	600	R	1,000	R	1,100	-	
	40	1,500	2,300	R	4,000	R	4,600	-	
Eurex GUI via Internet	n/a	300 [X3]							

Eurex GUI-only-Channel (on lines without MIC)	**5**	-	750	R	750	R	750	-	-
	10	-	900	R	1,600	R	1,800	-	
	40	-	2,300	R	4,000	R	4,600	-	

Legend	
Tier A1	Metro areas of Amsterdam, Frankfurt, London, Milan, Paris and Zurich
Tier A2	Metro areas of Chicago, New York, Hong Kong and Singapore
Tier B1	Germany, France, UK, The Netherlands, Austria and Switzerland
Tier B2	U.S.
Tier C	Belgium, Ireland, Italy, Luxembourg, Sweden, Spain, Portugal, Denmark and Finland
Tier D	Australia, Gibraltar and Greece
R and other Locations	Availability of high-bandwidth MIC (80 Mbit/s, 260 Mbit/s and 760 Mbit/s) and Eurex Trader GUI in other locations on request.
X1	• In the metro areas of Chicago, New York and in the U.S. only 1.5 Mbit/s is available. • In the metro areas of Hong Kong, Singapore, in Australia, Gibraltar and Greece only 2 Mbit/s is available.
X2	For Combined Access, the bandwidth of the iAccess connection will be aligned with the bandwidth of the associated leased line.
X3	GUI connection via internet is free of charge for provider with a MIC, a GUI-Channel or a 10 Gbit/s connection in Co-Location, otherwise the monthly charge of EUR 300/month applies (per participant, number of open Eurex Trader GUIs not limited)
Remarks	• For the purpose of fault tolerance, leased line based connections must be ordered in pairs (redundant)~~, except for disaster recovery locations of the provider~~. • Tier prices are reference prices only and may vary depending on specific participant locations and technical feasibility. Prices for other locations on request. • 10 Gbit/s is available in specific Co-Location (Equinix) rooms only~~, not available in Colt proximity~~.

2. Dissemination of un-netted market data to Trading Participants via Multi-Member-System Provider installations

For the dissemination of un-netted market data (Eurex EMDI, Eurex EOBI) to a Trading Participant via a Multi-Member-System Provider installation a monthly fee of 500 € per Trading Participant is charged to the Service Provider.

3. Maturity and further explanation

Connection fees will be charged monthly and become due by the third Business Day of the following calendar month.

Depending on the chosen connection component and the number of connection components chosen, monthly connectivity fees will be charged by Eurex Frankfurt AG.

The grand total of the monthly connection fees will be calculated by the sum of released connections of a provider, multiplied by the amount of the relevant price per connection component.