

Eurex Exchange's T7 release 4.0

September 2016



Agenda

- Introduction and cornerstones of the project
 - What's new in release 4.0 – At a glance
 - Rollout & Implementation planning
 - Implementation and communication schedule
- Migration of Trade Entry Services (TES) to T7
- Eurex GUI enhancements
- Enhancement of Eurex EOBI
- Various Functional Enhancements
- Various Technical Enhancements
- Enhancement of trading functionality for listed Total Return Derivatives
- Report changes

Introduction

What's new in release 4.0 – At a glance

Eurex Exchange is planning to launch T7 release 4.0 of Eurex Exchange's T7 on **21 November 2016**. The simulation period for T7 release 4.0 is currently planned to start on 23 September 2016.

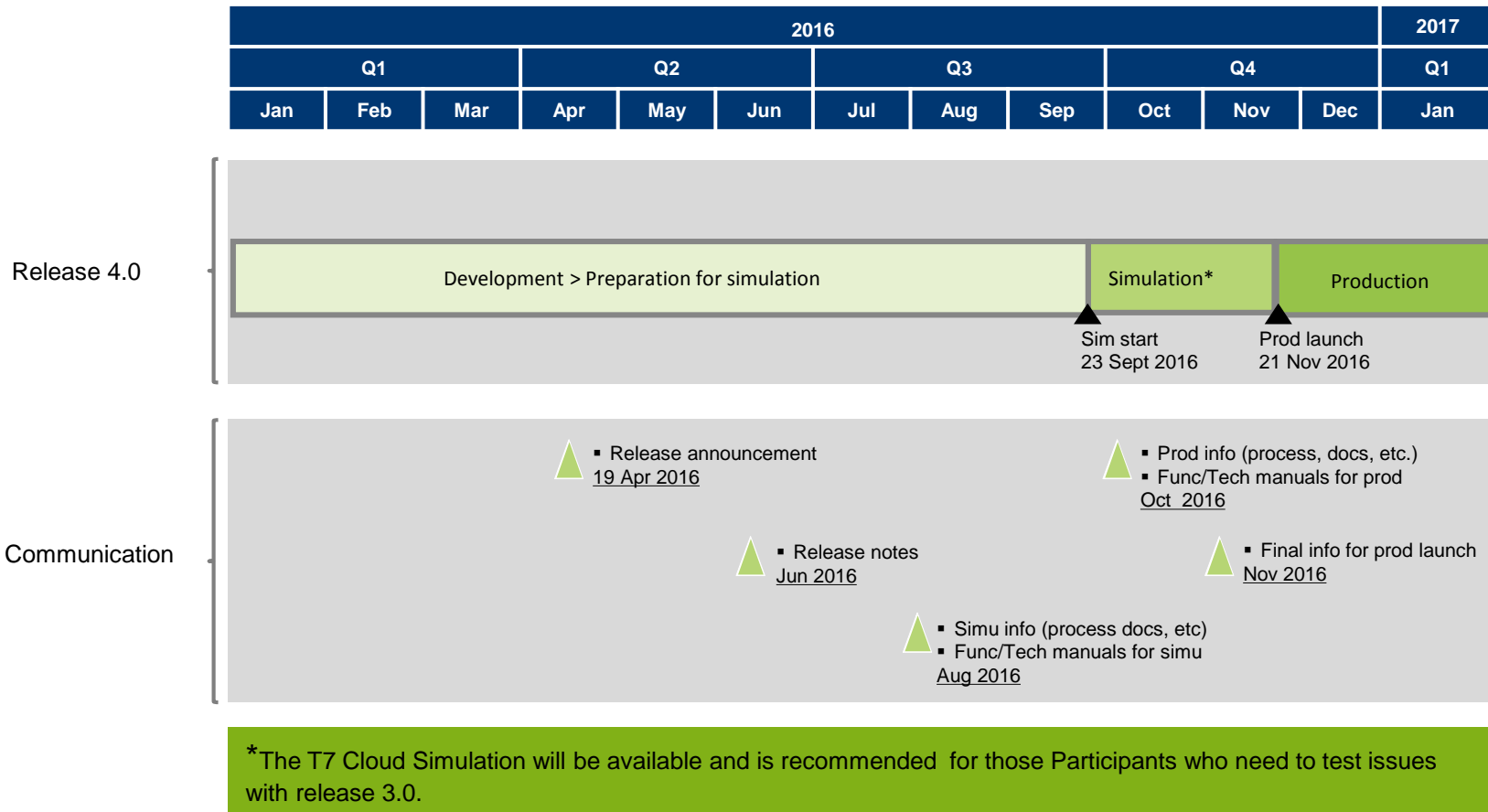
This presentation provides Trading Participants and Independent Software Vendors (ISVs) with an overview of the enhancements planned for T7 Release 4.0, including:

- Mandatory Java 8 Upgrade
- Migration of Eurex Trade Entry Services ("TES") functionality from the Eurex Clearing classic system to Eurex Exchange's T7 trading platform
- Enhancement of the Order Mass Cancellation Request
- Enhancement of trading functionality for listed Total Return Derivatives
- Report changes

Important: Please note that the migration of the TES functionality to Eurex Exchange's T7 trading platform involves a comprehensive and non-backward compatible interface change. Those Eurex Participants who are currently using the FIXML interface for accessing the TES functionality will be required to migrate their applications to the ETI interface.



Rollout and implementation planning



Implementation and communication schedule

Eurex Exchange's T7	Q2/2016			Q3/2016			Q4/2016		
	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Release Notes									
Eurex Exchange's T7 Release Notes			◆			●			
Simulation									
Participant Simulation Guide						●			
Overview and functionality									
Functional and Interface Overview					●				
Functional Reference						●			
Participant and User Maintenance Manual							●		
Eurex GUI solutions									
Eurex Trader and Admin GUI – Manual						◆	●		
Eurex Trader and Admin GUI - Installation Manual						◆	●		
Trading interfaces									
Eurex Enhanced Trading Interface – Manual					◆		●		
Eurex Enhanced Trading Interface - XML Representation					◆		●		
Eurex FIX Gateway - FIX 4.2 and 4.4 Manual					◆		●		
Eurex FIX Gateway - FIXimate FIX 4.2 and 4.4					◆		●		
Eurex FIX Gateway - FPL Repository					◆		●		
Market and reference data interfaces									
Eurex Market + Reference Data Interfaces, Manual					◆		●		
Eurex Market + Reference Data Interfaces, FAST Templates					◆		●		
Eurex Reference Data File – FIXML Schema Files					◆		●		
Eurex Extended Market Data Services – Manual					◆		●		
Eurex Extended Market Data Interfaces, FAST Templates					◆		●		
Eurex Enhanced Order Book Interface – Manual					◆		●		
Eurex reports									
Eurex XML Reports - Reference Manual						◆	●		
Network access									
Eurex Network Access Manual					◆		●		

Existing documents (see left) will be revised for release 4.0.

Preliminary versions (identified by ◆) will be published in June 2016.

Final versions (identified by ●) will be published in September and October 2016 prior to the production launch.

Further support for the development of TES software will be provided by the publication of ETI Header files, Message Flows and Repositories as preliminary versions in June.

The documents will be available on the Eurex website:

www.eurexexchange.com

via

Technology>Eurex Exchange's T7>System Documentation>Release 4.0

Please note that dates are preliminary and subject to change

Agenda

- Introduction and cornerstones of the project
- Migration of Trade Entry Services (TES) to T7
 - Benefits of TES available in T7 ETI
 - TES migration planning
 - Current TES types - example
 - T7 TES types
 - TES profile definition - example
 - TES roles and entitlements
 - Impact on market data interfaces
- Eurex GUI Enhancements
- Enhancement of Eurex EOBI
- Various Functional Enhancements
- Various Technical Enhancements
- Enhancement of trading functionality for listed Total Return Derivatives
- Report Changes



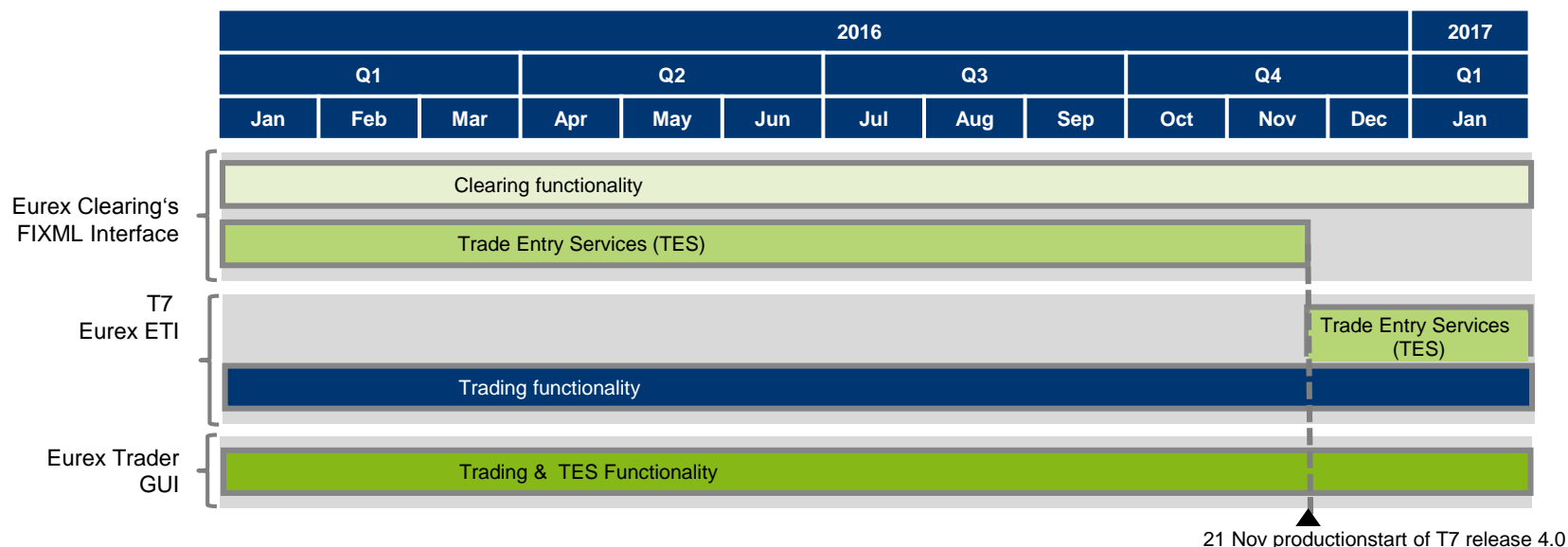
Benefits of TES available in T7 ETI

- With T7 Release 4.0, TES functionality will be migrated to the Eurex Exchange's Trading platform.
- A major goal is to improve TES.

All trading functionality available in T7 ETI	Additional complex instruments available	Directly send a TES to a specific trader
<ul style="list-style-type: none"> • On-exchange and off-book derivative trading use the same trading interfaces • Trading applications only need to support ETI for trading functionality 	<ul style="list-style-type: none"> • Expands TES to additional complex instruments not currently available to TES • More granularity for e.g. minimum lot size / non-disclosure limit 	<ul style="list-style-type: none"> • Currently a TES can only be sent to a Trader Group • With T7 4.0, you can directly reach the trader that should approve the TES • Additionally, in the Eurex Trader GUI, you can assign nicknames to your counterparts for a even easier identification.

TES migration planning

- Eurex decided to separate trading and clearing technology. Currently TES is part of the legacy Eurex Clearing classic system and is therefore planned for migrate to T7.
- The Trade Entry Service will be activated on T7 in a single step for all Eurex derivatives as part of the T7 launch release 4.0 (planned for 21 November 2016) reducing migration effort for Eurex Participants.
- All Eurex TES Participants who have actively used the TES service recently will be enabled for TES trading on Eurex Exchange's T7 by assigning the TES trader and TES broker roles on Participant level. TES users active on the Eurex system will be migrated to T7.
- Participants must validate the results of the migration process and, if necessary, 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 ahead of the start of the simulation phase.



In the simulation environment, the TES functionality will be available in Eurex ETI from September 2016 with a build kit provided at least two months prior to simulation start.



Current TES types - example

Current system does not distinguish between TES and instrument types.

Different product groups are associated with different TES types (as per table below).

Multiple technical requests are required to achieve this.

		Eurex Classic TES Types										
Prod Group	Product Group Description	Block (bi-lateral)	Block (multi-lateral)	Strategy Block	Vola Strategy Block	EFP_Fin	EFP_IDX	EFP_EEX	EFS	Vola	Flex	
FBND	Capital Market Futures	✓				✓			✓	✓		✓
FCUR	FX Futures	✓	✓				✓			✓		
FINT	Interest Rate Futures	✓				✓				✓		
FINX	Index Futures	✓	○				✓			✓	✓	○
FSTK	Stock Futures	✓								○	✓	
OCUR	FX Options	✓	✓	✓	✓							
OFBD	Options on CM Futures	✓	✓	✓	✓							✓
OFEN	Options on Energy Futures	✓		✓								
OFIT	Options on IR Futures	✓		✓	✓							
OINX	Index Options	✓		✓	✓							✓
OSTK	Stock Options	✓	✓	✓	✓							✓

✓ All or almost all products of product group are assigned to corresponding TES Type
 ○ Only a small number of products are assigned to corresponding TES Type



T7 TES types

- TES on T7 will support the following services referred to as TES types
 - Block trades either bi- or multi-laterally agreed
 - Exchange for Physicals (EFP) Financials which contains a cash reference to specific bonds
 - Exchange for Physicals (EFP) Index which contains a cash reference to an equity basket
 - Exchange for Swaps (EFS) which contains a cash reference to a swap contract
 - Vola trades which contains a reference to an options trade off-book
- TES types specified in T7 are independent of an instrument type and can be linked to different instrument types

Instrument Type	T7 TES types				
	Block trade	Block with external reference			Vola Trade
		EFP Fin	EFP_Idx	EFS	
Simple Future	Already exists	Already exists	Already exists	Already exists	Already exists
Simple Option	Already exists				
Futures Calendar Spread	New				
Standard Futures Strategy	New				
Pack and Bundle	New				
Strip	New				
Standard Option Strategy	Already exists				
Non-standard Options Strategy	New				
Volatility Strategy	Already exists				
Flexible Instrument (any needs to be entered as a block trade in flexible instruments)	Already exists				

TES profile definition - example

- To ensure flexible mapping between products, instrument types & TES types
- To allow flexible mapping between products, instrument types & TES type combinations
- Complemented by flexibility and expiry range
- Specifies additional attributes (lot size, and non-disclosure limit) for each combination
- A complete table for all products will be published on the Eurex website (updates provided via circulars)

TES profile summary								
Product	Instrument type	TES type	Broker Allowed	Max Participants	Min Price Step	Min lot size	Non-disclosure limit	Price validation rule
FDAX	Simple	Block	FALSE	2	0.5	250	500	FUTURE SIMPLE INSTRUMENT
FDAX	Flexible	Block	FALSE	2	0.5	250	1	FUTURE SIMPLE INSTRUMENT
FDAX	Simple	Vola	FALSE	2	0.5	1	500	FUTURE SIMPLE INSTRUMENT
FDAX	Simple	EFP_Idx	FALSE	2	0.5	1	500	FUTURE SIMPLE INSTRUMENT
FDAX	Calendar Spread	Block	FALSE	2	0.5	250	500	FUTURES SPREAD
OGBL	Simple	Block	TRUE	30	0.005	100	999999	OPTION SIMPLE INSTRUMENT
OGBL	Flexible	Block	FALSE	2	0.005	100	1	OPTION SIMPLE INSTRUMENT
OGBL	Standard Strategy	Block	FALSE	2	0.005	100	999999	STANDARD OPTION STRATEGY
OGBL	Volatility Strategy	Block	FALSE	2	0.005	100	999999	OPTION VOLATILITY STRATEGY
OGBL	Non-standard Strategy	Block	FALSE	2	0.005	100	999999	NON STANDARD OPTION STRATEGY



TES roles & entitlements

TES roles are provided in T7 on business unit level to Participants and, afterwards, the business unit administrator can provide the corresponding TES roles to a user belonging to that business unit similar to the roles assignment procedure in the on-exchange area.

By default, each Eurex Participant will receive the TES trader, TES broker and TES viewer role. However, the TES broker role will only be supported for specific product – instrument type – TES type combination.

The counterparty information will be provided in a more granular level as of today. With the migration to T7, the complete User ID of the counterparty (11 digits, e.g. ABCFR TRD 001) will have to be entered. Currently the Member ID and Subgroup of the user is supported (8 digits, e.g. ABCFR TRD).

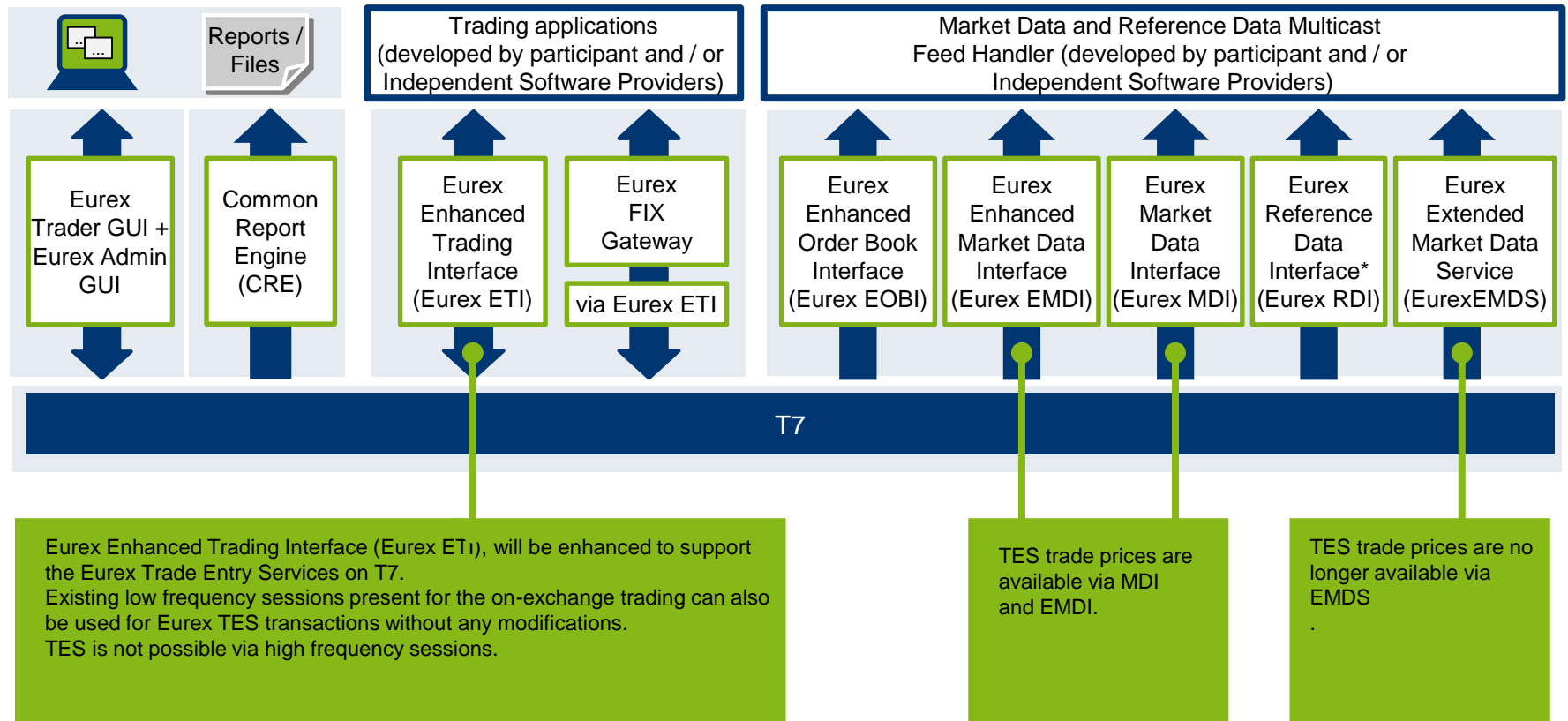
TES Participant activities	TES trader (must be involved in the TES trade as one of the counterparty's)	TES broker (trade capture platform) (not involved in the TES trade as a counterparty)
Enter TES trade	✓	✓*
Modify TES trade	✓	✓
Approve TES trade	✓	
Delete TES trade	✓	✓

* Cannot be part of any trade side



Impact on market data interfaces

- On-exchange and off-book trading functionality provided by T7



Eurex Enhanced Trading Interface (Eurex ETI), will be enhanced to support the Eurex Trade Entry Services on T7. Existing low frequency sessions present for the on-exchange trading can also be used for Eurex TES transactions without any modifications. TES is not possible via high frequency sessions.

TES trade prices are available via MDI and EMDI.

TES trade prices are no longer available via EMDS.



Agenda

- Introduction and cornerstones of the project
- Migration of Trade Entry Services (TES) to T7
- Eurex GUI Enhancements
- Enhancement of Eurex EOBI
- Various Functional Enhancements
- Various Technical Enhancements
- Enhancement of trading functionality for listed Total Return Derivatives
- Report Changes

Eurex GUI enhancements



Important: The latest available update of Java 8 (minimum version 1.8.0_73) is mandatory for usage of the T7 GUI

The usage of the GUIs with older Java versions will not be possible. The respective Eurex T7 Trader GUI and Eurex T7 Admin GUI will not start, if the correct version of Java is not installed.

Eurex Trader GUI

- All TES trade types can now be started from both buy or sell side
- Full range of on-exchange strategy types available to align with on-exchange orders
- Bulk load support now available for all TES trade types
- Indicator for non-disclosure limit and disclosure control option
- Faster TES entry via introduction of “Simple Mode” (for bilateral block trades) and “Broker Mode” (for multilateral block trades)
- New Trade Split Support via calculation tool allows traders to trade between 2 price ticks
- Contract information popup with minimum lot size (defined by the exchange)
- Display of TES transaction size limit
- Page broker allows the counterparty to inform the broker in the event the trade details are incorrect via a popup message
- Automatic alert signals (via a popup message) for incoming TES trades requiring approval

Eurex Admin GUI

- Added support to maintain TES limits
- Assign nicknames for Traders



www.eurexgroup.com

Agenda

- Introduction and cornerstones of the project
- Migration of Trade Entry Services (TES) to T7
- Eurex GUI Enhancements
- Enhancement of Eurex EOBI
- Various Functional Enhancements
- Various Technical Enhancements
- Enhancement of trading functionality for listed Total Return Derivatives
- Report Changes

Enhancement of Eurex EOBI

Inclusion of selected options (OKS2) and single stock futures

- For the Eurex EOBI enabled options products all options instrument types like standard option strategies, non standard option strategies and option volatility strategies will be fully supported
- Addition of other products to **Eurex EOBI** is under review
- To provide more capacity for future usage, Eurex will extend the multicast address ranges which will be used for the T7 Eurex EOBI market data interface.
- The new address ranges will be made available to coincide with the start of the simulation on 23. September 2016 and Production on 21. November 2016

Production:

Multicast Groups (Service A): 224.0.114.144-159 Multicast Groups (Service B): 224.0.114.160-175

Simulation:

Multicast Groups (Service A): 224.0.114.176-191 Multicast Groups (Service B): 224.0.114.192-207

Change in sequence of execution and cancellation messages regarding SMP events

- Order cancellations will be reported in the order of the time priority.



www.eurexgroup.com

Agenda

- Introduction and cornerstones of the project
- Migration of Trade Entry Services (TES) to T7
- Eurex GUI Enhancements
- Enhancement of Eurex EOBI
- Various Functional Enhancements
- Various Technical Enhancements
- Enhancement of trading functionality for listed Total Return Derivatives
- Report Changes



Various Functional Enhancements

Enhancement of the Order Mass Cancellation Request

- The Order Mass Cancellation Request on **Eurex ETI** and **Eurex FIX** interfaces will be enhanced to help Participants manage their open orders in the book more efficiently
- Side and price will be included to the filter criteria of the Order Mass Cancellation Request on both **Eurex ETI** and **Eurex FIX** interfaces
- Side and price will also be included in Order Mass Cancellation Notification on both **Eurex ETI** and **Eurex FIX** interfaces.
- Side and price will also be included in the Order Mass Cancellation Response on **Eurex FIX** interface but the Order Mass Cancellation Response on **Eurex ETI** will not be changed
- Using a single Order Mass Cancellation Request with side and price as filters, Participants will be able to delete their multiple orders on either buy or sell side of the order book until a particular price level. The request can only be sent for single instruments

Trade Volume Reporting from volatility strategies

- The trade volume of the underlying leg of volatility strategies will be reported via the market data interface

Book-or Cancel Restriction in order modify messages

- Participants will be able to specify on each order modification whether an existing Book-or-Cancel (added) order to be treated like a normal order, a normal (added) order to be treated like a Book-or-Cancel, or keep the orders as originally specified

Increase Flex Account

- PartyIDPosition-Account field to be increased from 20 to 32 characters



www.eurexgroup.com

Agenda

- Introduction and cornerstones of the project
- Migration of Trade Entry Services (TES) to T7
- Eurex GUI Enhancements
- Enhancement of Eurex EOBI
- Various Functional Enhancements
- Various Technical Enhancements
- Enhancement of trading functionality for listed Total Return Derivatives
- Report Changes



Various Technical Enhancements (1/2)

Multimarket capability for MDI, RDI and RDF

Eurex MDI, Eurex RDI and Eurex RDF will be extended, allowing markets to operate independently of each other using Eurex MDI, Eurex RDI or Eurex RDF, and that it will in future be possible to open certain markets individually.

This will involve T7's infrastructure enhancement with

- One dedicated **Eurex MDI** and **Eurex RDI** service instance for each market
- The public Reference Data Files (**RDF**) will be split per market. There will be one *SenderCompID* per market. The *MarketDataReport* message (**RDI**) will be extended by the field *marketID*.

Important It is not guaranteed that market specific **RDI/MDI** data streams will use separate multicast addresses.

Additional information in the trade messages delivered via the Eurex FIX interface

- FIX messages *TradeCaptureReport* (AE) and *UserTradeCaptureReport* (UAE) will be enhanced to deliver the information about the original **ETI SessionID**, from which the trade was generated

Implementation details for the supported FIX versions:

- FIX 4.2 - the field *PartyIDSessionID* (tag 20055) is included as optional field in the message *UserTradeCaptureReport* (UAE)
- FIX 4.4 - the additional *PartyID* (448) with *PartyRole* (452) = 55 (*Session Id*) will be delivered in the component *TrdCapRptSideGrp* contained in the message *TradeCaptureReport* (AE)



Various Technical Enhancements (2/2)

Extension of scope concept in ETI header files

In preparation for the Cash Market migration to T7, new scopes will be defined in the **ETI** interface. The scope name has some wide ranging impact on the names of the **ETI** artifacts and their contents:

- All **ETI** artifacts (files) the scope is part of the file name (e.g. eti_Scope.xml)
- Inside the xml file, the package is named "eti_Scope"

The scope will be added to the **ETI** artifacts names.

Eurex:

- eti_Derivatives.xml
- ETILayouts_Derivatives.h

The package name (as part of the xml file) will be

- eti_Derivatives

The scope will not be part of the of the ETI structures (Messages, Components, Sequences) names in the header file (ETILayout_Scope.h).



Agenda

- Introduction and cornerstones of the project
- Migration of Trade Entry Services (TES) to T7
- Eurex GUI Enhancements
- Enhancement of Eurex EOBI
- Various Functional Enhancements
- Various Technical Enhancements
- Enhancement of trading functionality for listed Total Return Derivatives
- Report Changes

Enhancement of trading functionality for listed Total Return Derivatives

- Eurex intends to introduce further use of double price notation functionality to facilitate the introduction of listed Total Return Derivatives on T7, both for on-book and off-book trading
- This functionality allows for the traded price in T7 (referred to as trading notation) to be handled in a different format from that used in C7 (e.g. for an interest rate spread)
- Operationally the traded price is converted by T7 into a more standard format prior to forwarding to C7 – this format will be referred to as clearing notation
- The aim is to allow products that would trade for example in spread terms, and where the traded spread could be in basis point (e.g. reflecting an annualized spread) and where this traded price may take positive, negative or zero values
- However the traded spread will be used in conjunction with an underlying price
- The simulation timeline for listed Total Return Derivatives might not be the same as the T7 4.0 simulation time



Agenda

- Introduction and cornerstones of the project
- Migration of Trade Entry Services (TES) to T7
- Eurex GUI Enhancements
- Various Functional Enhancements
- Various Technical Enhancements
- Enhancement of trading functionality for listed Total Return Derivatives
- Report Changes

Report changes (1/2)

Report	Report name	Status	Modification
TE545	T7 Daily TES Maintenance	New	New Report in replacement of the old Eurex Classic report
TE930	T7 Daily TED Trade Statistics	New	Replaces Eurex Report TD930 Daily Trade Statistics
TA115	Total Return Futures Parameters	New	New report with conversion parameters for total return futures
TA113	Complex Instrument Definition	Changed	This report must be completed in order to introduce the flexible instrument creation
TE910	Daily Match Step Activity	Changed	Includes deals resulting from TES trades for simple, complex and flexible instruments, Adds original TES ID and the TES types and complete the list of Trade Types
TE810	T7 Daily Trade Confirmation	Changed	Include deals resulting from TES trades for simple, complex and flexible instruments, Adds original TES ID and the TES types and complete the list of Trade Types
TC811	Variance Futures Trade	Removed	TES trade for variances futures will be directly integrated in TE810

Report changes (2/2)

Report	Report name	Status	Modification
TD960	Monthly Trd Statistics by Cntr	Removed	Information can be found in Eurex website www.eurexchange.com >Market data>statistics
TD961	Monthly Statistics by Class	Removed	Information can be found in Eurex website www.eurexchange.com >Market data>statistics
TD962	Year To Date Trd Stsc By Class	Removed	Information can be found in Eurex website www.eurexchange.com >Market data>statistics
TD963	Exchange Volume Statistics	Removed	Information can be found in Eurex website www.eurexchange.com >Market data>statistics
TD970	Trading Volume & Market Shr - Opt	Removed	Decommissioned
TD971	YTD Member Option Trade Volume	Removed	Decommissioned
TD975	Trading Volume & Market Shr - F	Removed	Decommissioned
TD976	YTD Member Future Trade Volume	Removed	Decommissioned

Version History

Description of Change	Slide Number	Version Date
Added a tick for Modify Trade for a Broker	12	06-Sep-16
Removed the sentence: Important: Except for EEX trade prices which remain on this interface (for EMDS)	13	06-Sep-16