

# T7 Release 7.0

## Derivatives and Cash Markets

### Participant Simulation Guide

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### **Abstract**

This document describes the timeline, new and changed features as well as Simulation focus days for the T7 Release 7.0 Simulation. Trading participants should use this document to plan and prepare their T7 Release 7.0 Simulation participation. This document should be read alongside the **T7 RELEASE 7.0 PRELIMINARY RELEASE NOTES**, all required technical interface descriptions, the regular **SIMULATION CALENDAR** and the regularly updated **IMPLEMENTATION NEWS** either on [www.eurexchange.com](http://www.eurexchange.com) > Technology for the derivatives market or on [www.xetra.com](http://www.xetra.com) > Technology for the cash market.

### **Keywords**

T7 Enhanced Trading Interface, T7 Enhanced Market Data Interface, T7 Enhanced Order Book Interface, T7 Extended Market Data Service, T7 Reference Data Interface, T7 FIX Gateway, Common Report Engine, T7 Trader GUI, T7 Admin GUI, T7 Trade Entry Services

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## 1. Definitions and Abbreviations

Term	Explanation
BTRF	Basket Total Return Futures
CCP	Central Counter Party
CEF®	Deutsche Börse Group Real Time Data Feed
CRE	Common Report Engine
EEX	European Energy Exchange
EMDI	T7 Enhanced Market Data Interface (non-netted)
EMDS	T7 Extended Market Data Service
EOBI	T7 Enhanced Order Book Interface
ETI	T7 Enhanced Trading Interface
ETRF	Equity Total Return Futures
Eurex EnLight	The selective RFQ platform
FIX	Financial Information eXchange protocol
FIXML	Financial Information Exchange Mark-up Language
FWB	Frankfurter Wertpapierbörse
ISV	Independent Software Vendor
GMC	GUI Middleware Cluster for T7 Trader GUI & T7 Admin GUI, T7 Clearer GUI
MDI	T7 Market Data Interface (netted)
MiFID II	Markets in Financial Instruments Directive
MiFIR	Markets in Financial Instruments Regulation
TES	T7 Entry Services
T7	T7 trading system developed by Deutsche Börse Group
RDF	Reference Data File
RDI	Reference Data Interface
RfQ	Request for Quotes
XML	eXtensible Mark-up Language



## 2. Simulation Overview

### 2.1 Introduction

The purpose of T7 Release 7.0 Simulation is to provide an opportunity for participants and ISVs to become familiar with the new and enhanced functional and technical setup and features of T7 Release 7.0 and to prepare for production.

The key objectives of the T7 Release 7.0 Simulation:

- Provide high quality information and Simulation to support participant and ISV readiness.
- Familiarize participants with the new trading services functionality.
- Early identification of issues both from the Exchange and from the participants' side to minimize risk of T7 Release 7.0 launch and production operation.

T7 Release 6.1 permanent Simulation will end on Thursday, 6 September 2018. From Friday, 7 September until Sunday, 23 September 2018 the Simulation environment will not be available due to maintenance and conversion to Release 7.0. The T7 Release 7.0 Simulation execution is scheduled for the period from Monday, 24 September until Friday, 30 November 2018. The production launch of T7 Release 7.0 is planned for Monday, 3 December 2018. The T7 Release 7.0 Cloud Simulation will start from 31 August 2018.

The chronological order for the T7/FX Release 7.0 introduction will be aligned with the other trading markets. Therefore the conversion of the T7/FX Simulation environment to Release 7.0 will also be performed from 7 September to 23 September 2018 inclusive. The T7/FX Simulation Release 7.0 will be available from 24 September and production launch for T7/FX Release 7.0 will be effective from 3 December 2018.

The exchange offers several dedicated focus days during the Simulation phase to help participants become accustomed to new or changed features of T7. On those days, which are marked in the Simulation calendar, special testing scenarios will be provided. This document describes the different test scenarios for the T7 Simulation.

A description of the new/changed functionality and technical enhancements has been communicated in the form of the document "**T7 7.0 RELEASE NOTES**" (one single document for functional and technical aspects in both, preliminary and final version) and with the provision of Interface Specifications and User Manuals:

Derivatives market:

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

-> *Technology* -> *T7 trading architecture* -> *System documentation* -> *Release 7.0*

Cash market:

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

-> *Technology* -> *T7 trading architecture* -> *System documentation* -> *Release 7.0*

## 2.1.1 Further Notes and Information

Please note and be aware of the following T7 Release 7.0 simulation conditions:

1. The T7 Release Simulation is a shared Simulation environment with the purpose of providing participants the opportunity to test functional enhancements for the forthcoming T7 release. Following a release the environment will be available with the current software for further testing of all T7 related functionality. The T7 Simulation is not designed for very extensive or even performance testing. Participants who would like to test scenarios involving an unusually large amount of order and quote transactions and/or trades shall contact their TKAM. The TKAM will ask for the purpose of the test and a detailed description of the participants test scenario (including number of expected orders, quotes and trades). The TKAM together with the participant will evaluate the request and attempt to find a solution which can realistically be provided together with a potential date and time for the execution.
2. The IP addresses for the SFTP solution will change. The impact for participants will be that they will have to adjust the IP addresses. The change of the IP addresses will be effective from November 9<sup>th</sup>, 2018 in Production. In the Simulation environment, the new IP addresses have to be used as of 15 October 2018. In Production there will be a transition period between 15 October 2018 and 9 November. Details of the change of the IP addresses and the transition period have been provided in Xetra Circular 088/18.
3. The contract notes in the new 7.0 format (with TVTIC) will be provided by CCP in Simulation from 15 November onwards.
4. In exceptional cases, the EMDS will be available from 10 a.m. on Mondays.

## 2.2 Intended audience

This document serves as the guide for all Simulation participants, i.e. current and future users of the T7 system. In particular, the following participants will be involved in the Simulation:

- Exchange trading participants
- ISVs (Front, Middle and Back office)

In order to achieve a common understanding of the responsibilities and tasks, the distribution of this Simulation Guide to the appropriate project teams and line organizations is recommended as soon as possible. All parties involved, e.g. central coordinators, system administrators, traders and ISV representatives, should be aware of their tasks before the start of the Simulation.

## 2.3 Timeline

Below the key dates concerning the introduction of T7 Release 7.0 are outlined.

T7 7.0 Cloud Simulation Start	31 August 2018
T7 Release 6.1 to Release 7.0 Simulation Conversion	7 September – 23 September 2018
T7/FX Simulation Start	24 September 2018
T7 Release 7.0 Simulation Start	24 September 2018
T7 Release 6.1 to Release 7.0 Production Conversion	30 November(EOB) – 1 December 2018
T7 Release 7.0 Connection Test	01 December 2018
T7 Release 7.0 Production Launch	03 December 2018
T7/FX Poduction Launch	03 December 2018

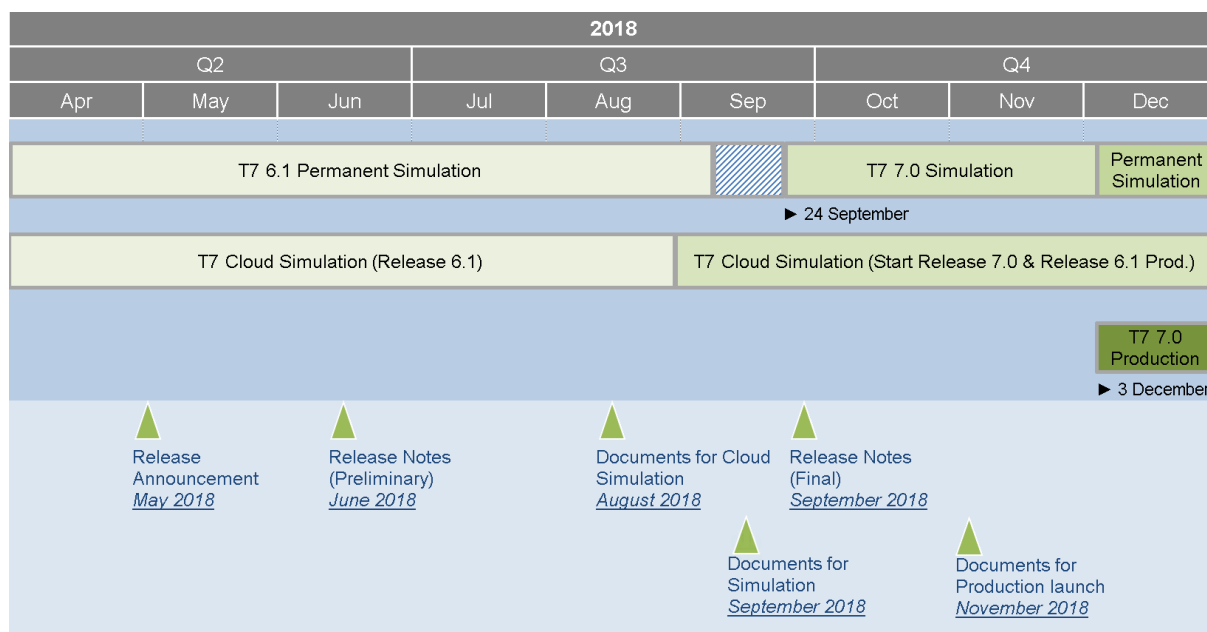


Figure 1: T7 Release 7.0 document publication and introduction timeline

## 2.4 T7 Cloud Simulation

In addition to T7’s release Simulation participants can also use the T7 Cloud Simulation which allows trading participants and ISVs to test against the current T7 production and Simulation software version. In this environment participants can initiate predefined market scenarios and test specific strategies more easily than in a shared environment. The T7 Cloud Simulation is available 24/7 for a fixed price per hour and is accessible using an SSL-encrypted internet connection or via a dedicated leased line channel. The T7 Cloud

Simulation will make a pre-Simulation available for early adopters from Friday, 31 August 2018. For more information on the T7 Cloud Simulation please refer to:

[www.eurexchange.com](http://www.eurexchange.com) -> *Technology* -> *Eurex T7 Cloud Simulation*

[www.xetra.com](http://www.xetra.com) -> *Technology* -> *T7 Trading Architecture* -> *Cloud Simulation*

## 2.5 Simulation Calendar

The Simulation Calendar for the derivatives market is available under the following path:

[www.eurexchange.com](http://www.eurexchange.com) -> *Technology* -> *Simulation Calendar*

Whereas the Simulation Calendar for the cash market can be found on the following link:

[www.xetra.com](http://www.xetra.com) -> *Trading* -> *Trading calendar and trading hours*

During the Simulation, the number of end-of-day roll overs vary between 2 to 3 times per week. Furthermore, a week with five roll overs has been scheduled from 19<sup>th</sup> to the 23<sup>rd</sup> of November.

### 2.5.1 Guiding principles for Simulation calendar

- The Simulation will be set up and run from both a functional and technical perspective as production-like as possible to help simulate business processes under realistic conditions. In order to provide a production-like system environment, the different T7 components will be set up as an integrated Simulation environment. Nevertheless, system availability and technical performance will be scaled to Simulation requirements and will differ from production.
- T7 Release 6.1 permanent Simulation will terminate with the end of day processing on 6 September 2018. The T7 Simulation will not be available for participants and ISVs from 7 September until 23 September 2018 in order to prepare the T7 Release 7.0 Simulation. Participants are encouraged to use the T7 Cloud Simulation for testing purposes during this period.
- The T7 Release 7.0 Simulation is planned to start on 24 September 2018 and will last for approximately ten weeks until 30 November 2018. All functional and technical preparations should be completed before the start of the Simulation.
- After the T7 and T7/FX Release 7.0 Simulation has finished on 30 November 2018, the permanent Simulation will continue in both respective environments.
- On roll over days, calendar days correspond to actual business days. The following days until the next roll over day have the business date of this forthcoming roll over day. Here several calendar days (with 24 hours trading availability) constitute one business day.
- Weekends are generally open for Simulation, but no technical and functional support will be available.

- In order to provide those participants and ISVs not located in a European time zone with the maximum possible access to the Simulation environment, it is envisaged that the T7 Release 7.0 Simulation back-end systems and network will be re-opened as soon as the roll over has been successfully completed.
- Quarterly and monthly last trading/maturity & expiration dates for standard products are planned throughout the T7 Release 7.0 Simulation. Details are listed in the Simulation Calendar.

## 2.6 Liquidity for selected products in the Simulation environment

### 2.6.1 Derivatives Market: Liquidity (bid/ask prices)

Liquidity (bid/ask prices) will be provided on each trading day throughout T7 Release 7.0 Simulation in the following products:

#### Options

- **OESX** and **ALV**: only best bid, best ask
- **ODAX**, **OGBL**, **OGBM** and **DB1**: Bid and ask prices with an order book depth up to 3
- **OKS2**: only best bid, best ask

#### Futures

- **FGBL**: Bid and ask prices with an order book depth up to 20
- **FESX**: Bid and ask prices with an order book depth up to 20
- **EVAR**: only best bid, best ask

#### Futures Calendar Spread Orders

- **FESX**: Bid and ask prices with an order book depth up to 20
- **FGBL**: Bid and ask prices with an order book depth up to 20

### 2.6.2 Cash Market: Liquidity (bid/ask prices)

For the duration of the member Release Simulation, the liquidity (bid / ask quantities in the order book) will be provided via automated scripts for the following instruments.

#### Instruments in XETR with liquidity providing scripts:

- LU0937835576 (Bid and ask prices with an order book depth level up to 3)
- LU1306625283 (Bid and ask prices with an order book depth level up to 3)

- DE000A1E0HR8 (Bid and ask prices with an order book depth level up to 3)
- DE0005140008 (Bid and ask prices with an order book depth level up to 3)
- DE0005557508 (Bid and ask prices with an order book depth level up to 3)

**ICEBERG:**

- AT0000730007 (Bid and ask prices with an order book depth level upto 3)
- DE0005200000 (Bid and ask prices with an order book depth level upto 3)

**VDO :**

- AT0000730007 (Single bid VDO order)
- DE0005200000 (Single ask VDO order)

**BEST Quote:**

- LU0937835576
- LU1306625283
- DE000A1E0HR8
- DE0005140008
- DE0005557508

## 2.7 Instruments for settlement End-To-End Test

Clearing and settlement functionality can be tested with following instruments from 15 October, 2018 until November 15, 2018 in the T7 7.0 Release Simulation:

Name	ISIN
ADVA AG OPT.NETW.O.N.	DE0005103006
TELEGATE AG O.N.	DE0005118806
BEIERSDORF AG O.N.	DE0005200000
CONTINENTAL AG O.N.	DE0005439004
DRILLISCH AB	DE0005545503
DT.TELEKOM AG NA	DE0005557508
FRESEN.MED.CARE AG O.N.	DE0005785802
BILFINGER BERGER AG	DE0005909006
LYXOR G.BUL.SEC.04/UND DZ	DE000A0LP781
ETFS MET.SEC.DZ07/UN.XAU	DE000A0N62G0
DT.BOERSE COM. XETRA-GOLD	DE000A0S9GB0
DB ETC PLC P GOLD EUR 60	DE000A1E0HR8

## 3. Functional Enhancements – Derivatives Markets

### 3.1 Eurex Improve

Eurex Improve is a client flow facilitation service enabling the execution of customer flow at best price levels in the central order book of Eurex markets. The corresponding functionality will be introduced with Release 7.0 and is denoted as “Client Liquidity Improvement Process” (CLIP) in T7. CLIP will supplement the existing request-for-cross functionality.

This service will be provided in T7 Release 7.0 Simulation as of 4 October, 2018.

The Eurex Improve functionality will involve three different parties:

- End Client: An end client requests an execution of its client flow in the central order book. The Eurex Improve functionality will provide a secured execution of the client flow at a price and quantity agreed outside of T7. Usually, the end client is represented by a client broker registered at Eurex.
- Proprietary Broker: The proprietary broker is on the opposite side of the client flow and agrees to be executed against the client flow at the price and quantity level agreed with the client before. In contrast to the client side, the execution of the broker side is subjected to price competition. The proprietary broker can be identical or different to the client broker.
- Liquidity Providers: Any market participant not involved as client or proprietary broker has the opportunity to interact in the execution of the client flow.

#### 3.1.1 Impact on interfaces

The following interfaces are affected. For detailed changes, please refer to the interface manuals and to the *Online Help* in the GUIs.

- Trading interfaces ETI, FIX
- Market Data Interfaces MDI, EMDI, EOBI
- Reference Data Interfaces RDF
- GUI

### 3.2 Enhanced Risk Functionality and Protection

With the release introduction, the following enhancements will be provided regarding risk functionality and protection in T7:



- Enhancement of Quote Mass Cancellation to Business Unit (BU) level  
This service will be provided in T7 Release 7.0 Simulation as of 24 September, 2018.
- Enhancement of Market Maker Protection to BU level  
This service will be provided in T7 Release 7.0 Simulation as of 24 September, 2018.
- New Pre-Trade Risk Limits functionality with a continuous check of whether traded quantities in combination of the incoming activity will breach the pre-defined risk limits.  
This service will be provided in T7 Release 7.0 Simulation as of 4 October, 2018.

### 3.2.1 Impact on interfaces

The following interfaces are affected. For detailed changes, please refer to the interface manuals and to the *Online Help* in the GUIs.

- Trading interfaces ETI, FIX
- GUI

### 3.3 Passive Liquidity Protection

Eurex will introduce a concept of passive liquidity protection (“PLP”) for specific products to strengthen order book trading. Aggressive order transactions (i.e. order transactions that are executable upon arrival at the matching engine) will be deferred by a time interval in the order of milliseconds or even lower, before they are able to interact with the order book. Non-aggressive order transactions (i.e. order transactions that are not executable upon entry and also denoted as passive order transactions) will directly impact the order book without deferral. Quote transactions are assumed to be passive by default and, consequently, will be treated like a Book-or-Cancel transactions with the consequence that a quote side executable upon entry will be deleted.

The effective use of the passive liquidity protection requires markets with an extrinsically driven price formation. For the Eurex exchange, the requirement is usually satisfied for options where price changes in the underlying market result to price changes of the corresponding option market or for FX products where pricing relevant information is provided from FX markets outside the Eurex environment. Apart from FX futures, it is therefore not intended to apply the passive liquidity protection to the futures market.

The product scope, the activation approach and the deferral times of the passive liquidity protection will be communicated separately at a later point in time.

### 3.3.1 Impact on interfaces

The following interfaces are affected. For detailed changes, please refer to the interface manuals and to the *Online Help* in the GUIs.

- Trading Interfaces ETI
- Reference Data Interfaces RDI, RDF

## 3.4 Equity & Basket Total Return Futures

After the successful launch of Equity Index Total Return Futures with T7 Release 4.0, Eurex plans to extend its portfolio of Total Return Futures by introducing Equity Total Return Futures (ETRF) and Basket Total Return Futures (BTRF). T7 Release 7.0 will provide the technical platform for trading these ETRF products and prepares trading of Basket Total Return Futures in 2019. The implementation of ETRF trading will thereby mirror closely the implementation of the already supported Equity Index Total Return Futures.

### 3.4.1 Impact on interfaces

The following interfaces are affected. For detailed changes, please refer to the interface manuals and to the *Online Help* in the GUIs.

- Trading Interfaces ETI, FIX
- Reference Data Interfaces RDF
- GUI

## 3.5 Other Functional Enhancements

### 3.5.1 Extension of Trading and Clearing Hours

To cover the Asian core market hours, trading and clearing hours will be extended for specific Eurex benchmark products. A separate announcement will provide information about exact schedule for trading and clearing.

On roll-over days, trading in flexible instruments in Eurex T7 Release 7.0 simulation will no longer be possible after 13:45 CET/CEST.

In the week from 19 November to 23 November 2018, Eurex T7 Release 7.0 simulation products will be started in two different stages:

- THX and T7-FX products will start at 19:00 CET
- Remaining products will start at 21:00 CET

### 3.5.2 Quote related Enhancements

T7 will apply the following enhancements for quotes:

- **Continuous Validation (Check for aggressive quotes)**  
Any type of quote entry (incl. mass entry and activation) will be validated for potentially immediate execution (denoted as check for aggressive quotes). If the check reveals that the quote entry would lead to immediate execution, then the corresponding quote side will be rejected.
- **Enhancement to Rejection Scope**  
With production launch, a new configuration possibility will be introduced regarding the scope for rejections, i.e. whether both quote sides or only one quote side should be taken into account.

### 3.5.3 Eurex EnLight Enhancements

Enhancements to the Eurex EnLight service are introduced continuously and will be communicated separately.

## 4. Functional Enhancements – Cash Markets

### 4.1 Introduction of T7 Entry Service (TES)

With T7 Release 7.0, an OTC functionality will be provided for the trading venue “XETR”. The consolidation of all trading activities (on-book/ off-book) will result in a single state-of-the-art trading platform.

Trading participants and ISVs who want to use OTC functionality in T7, i.e. the T7 Trade Entry Service (TES) functionality, will have to migrate to the T7 ETI/ FIX interface layout version 7.0. It will also be possible to enter OTC trades via the T7 Release 7.0 Trader GUI.

The main differences in the TES functionality compared to Eurex will be that only bilateral TES trades like, price/ quantity validations, TES Types, Auto Approval functionality and in the publication of TES Trades are possible.

The TES functionality on T7 will use the existing participant, business unit, user and session concept and will only be available via low-frequency sessions as it is currently the case for derivatives markets.

This service will be provided in T7 Release 7.0 Simulation as of 17 October, 2018.

Information regarding overall TES functionality of T7 can be found in the document “Functional Reference” published on the Xetra webpage for T7 Release 6.1:

[www.xetra.com](http://www.xetra.com) -> Technology -> T7 Trading Architecture -> System documentation -> Release 6.1 -> Overview and Functionality

For T7 Release 7.0 the “Functional Reference” will be available mid-September 2018:

[www.xetra.com](http://www.xetra.com) -> Technology -> T7 Trading Architecture -> System documentation -> Release 7.0 -> Overview and Functionality

#### 4.1.1 Impact on Interfaces

The following interfaces are affected. For detailed changes, please refer to the programming versions of the interface manuals once they are published and to the Online Help in the GUIs.

- Trading Interfaces ETI, FIX
- Market Data Interfaces MDI, EMDI, EOBI
- GUI

## **4.2 Enhancement of Quote Mass Cancellation**

With T7 Release 7.0, the Quote Mass Cancellation request will be enhanced to allow cancellation of quotes on the BU level, where all sessions will be considered. Thus, the risk for a market maker will be mitigated. In future, a BU will have the choice of cancelling its quotes based on session or BU level.

This service will be provided in T7 Release 7.0 Simulation as of 24 September, 2018.

### **4.2.1 Impact on Interfaces**

The following interfaces are affected. For detailed changes, please refer to the programming versions of the interface manuals once they are published and to the Online Help in the GUIs.

- Trading Interface ETI
- GUI

## **4.3 Enhancement Related to MiFID/MiFIR Requirements**

T7 Release 7.0 will introduce some additional functional enhancements to processes related to MiFID/ MiFIR requirements. For example, the Trading Venue Transaction Code (TVTIC) will be added to the T7 trade notifications. These enhancements aim at easing the participants' operational workflow.

## **4.4 Bonds and Warrants Trading**

T7 Release 7.0 will take preparatory steps to introduce bond and warrant trading.

With production launch, all interfaces (ETI, FIX, Public Reference data, GUI, reports TC540, TC810) include bond and warrant specific information. These changes will become relevant with launch of warrant and bonds at a later point of time.

## **4.5 Introduction of Intraday Auction Only trading Restriction**

Participants can flag an order as Intraday Auction Only (IAO) order by setting TradingSessionSubID to Intraday Only Auction in ETI/ FIX or choosing the Restriction IAO in the Order Entry related GUI views. In

case an order is flagged this way, it will only participate in scheduled intraday auctions, i.e. no opening, no closing, and no volatility auction. As with all auction only orders, an order flagged as IAO will receive a new priority time stamp each time an intraday auction begins, e.g. the order is activated for the intraday auction.

## 5. Technical Enhancements

### 5.1 Removal of Connection Gateways

To reduce the complexity of the ETI session logon process, the connection to the T7 trading system via the Connection Gateway (CGW) will no longer be possible with T7 Release 7.0. Participants can either directly logon to the active Partition Specific (PS) gateway for HF sessions or to any of the LF trading gateways for LF sessions. The IP addresses of the active/ standby PS gateways and the LF trading gateways are provided in the N7 Network Access Guide available via the (Xetra/ Eurex) website.

Participants using ETI 6.1 backward compatibility for T7 Release 7.0 will still be able to perform the session logon via the CGW. In the next T7 Release, the CGW will no longer be available.

Prior to the ultimate removal of the CGW with the next T7 Release, the assignment of the CGW to the HF/ LF sessions will still be visible in the member portal and will also continue to be provided during the ordering of new sessions. For participants using the ETI 7.0 layouts, this information can be ignored.

### 5.2 Data Format Change of Quantity Fields

With Release introduction, the format of the data type qty will be changed from a 4-byte integer to an 8-byte field with four decimals. The enhancement will support bonds and warrants trading.

For more information regarding “Data Format Change of Quantity Fields” please refer to the Release Notes, ETI and FIX Manuals on the Exchange webpage:

[www.xetra.com](http://www.xetra.com) -> Technology -> T7 Trading Architecture -> System documentation -> Release 7.0

[www.eurexchange.com](http://www.eurexchange.com) -> Technology -> T7 Trading Architecture -> System documentation -> Release 7.0

### 5.3 T7 Enhanced Trading Interface and FIX Interface

T7 Release 7.0 will provide backwards compatibility for the T7 ETI interface version 6.1, i.e. participants who do not want to use the new functionality will still be able to connect to T7 with the interface layout version 6.1 even after production launch of T7 Release 7.0.

Detailed information about the ETI changes and enhancements for T7 Release 7.0 is provided in the Trading Interfaces documentation on:

[www.xetra.com](http://www.xetra.com) -> Technology -> T7 Trading Architecture -> System documentation -> Release 7.0  
-> Trading Interface

[www.eurexchange.com](http://www.eurexchange.com) -> Technology -> T7 Trading Architecture -> System documentation -> Release 7.0  
-> Trading Interface

Please note that the T7 7.0 FIX Interface will **not provide** backward compatibility to the previous release.

## 5.4 Market Data and Reference Data Interface Changes

Detailed information on the enhancements and changes in the T7 Market and Reference Data Interfaces with T7 Release 7.0 will be provided in the respective Interface documentation:

[www.xetra.com](http://www.xetra.com) -> Technology -> T7 Trading Architecture -> System documentation -> Release 7.0  
-> Market and Reference Data interface

[www.eurexchange.com](http://www.eurexchange.com) -> Technology -> T7 Trading Architecture -> System documentation -> Release 7.0  
-> Market and Reference Data interface

Please note that the T7 7.0 Market and Reference Data Interfaces will **not provide** backward compatibility to the previous release.



## 6. Reports

The following reports will be enhanced with T7 Release 7.0

- **TC545 - T7 Daily TES Maintenance (cash market only)**  
This new report will cover the TES trading activities replacing the existing Xetra report TC820. The initiating user of a TES trade will see all sides' activities but without the corresponding Clearing information which is only disclosed to the approving traders. The information will be split per user, product and instrument and sorted per time.
- **TC810 - T7 Daily Trade Confirmation (cash market only)**  
The report will include deals resulting from TES trades.
- **TE910 - Daily Trade Activity (derivatives markets only)**  
This report will be changed due to the Eurex Improve functionality.
- **TE590 – CLIP trading indications (derivatives markets only)**  
A new daily report will be introduced for Eurex Improve. Per instrument and user, the report will list CLIP trading indications which involve the reported user as a broker. The report will comprise the following actions for a CLIP trading indication: CLIP announcement, CLIP matching and abandonment of a CLIP improvement period.
- **TT136 – Pre-Trade Risk Control report (derivatives markets only)**  
Will be introduced listing all risk limit breaches during the day, i.e. the maintenance of the risk limits by GCM as well as NCM.
- **TE810 – T7 Daily Trade Confirmation (derivatives markets only)**  
Will be changed due to enhancements regarding risk functionality and protection
- **TE545 – Daily TES Maintenance (derivatives markets only)**  
Will be changed due to enhancements regarding risk functionality and protection
- **TT132 – Market Maker Protection (derivatives markets only)**  
Will be changed due to enhancements regarding risk functionality and protection
- **TE540 – Daily Order Maintenance (derivatives markets only)**  
Report will be changed due to Passive Liquidity Protection functionality and will include new reason codes
- **TA115 - Total Return Futures Parameters (derivatives markets only)**  
Will be enhanced to report the R-Factor that is applied on the ETRF product parameters in the case of a corporate action
- **TE545 Daily - TES Maintenance report (derivatives markets only)**  
Will be enhanced to report TES trades that result from the execution of a basket The corresponding basket ID will be given in this report.

- **TE546 - Daily TES Basket Maintenance (derivatives markets only)**  
New report will document the TES trading activity on basket level.

The following (daily) billing reports **for the Cash Market** will be provided from 1 November, 2018 until 30 November, 2018 in T7 7.0 Release Simulation:

- CB042 Fee Per Executed Order
- CB050 Fee Overall Summary
- TL001 TL Usage Fees - System Transaction Overview

For more information regarding the billing reports for the derivatives market, created by the Eurex Clearing C7 System, please contact “Client Services Clearing & Admission Trading & Clearing” via your Key Account Manager.

## 7. Simulation preparation

Preparation activities should be completed prior to the start of T7 Release 7.0 Simulation.

### 7.1 Organisational preparation

Prior to the start of T7 Release 7.0 Simulation, the following organisational preparatory activities need to be completed by all participants to ensure readiness for the Simulation phase:

- All participants and ISVs will be asked to name a person acting as a single point of contact (SPoC) during the Simulation. This person shall coordinate all internal activities, functional as well as technical, and shall communicate with affiliated participants during Simulation, when collaboration is required. The SPoC maintenance is available to the participant via the web application under the following path:

[www.eurexchange.com](http://www.eurexchange.com) -> Member Section -> Contacts -> Release Contacts ( -> New Entry -> Category "Simulation SPOC" -> Release "Eurex T7")

[www.xetra.com](http://www.xetra.com) -> Member Section -> Technical Service -> Release Contacts

- Documents will be made available in order to facilitate and support general Simulation needs. However, in order to simulate the individual requirements participants are encouraged to define specific Simulation objectives and scenarios on their own.
- Personnel for participation in Simulation on the focus days (specified in the Simulation calendar) should be identified and confirmed.
- Participants are encouraged to set up an internal issue management processes.

### 7.2 Functional preparation

Participants and ISVs planning to participate in the Simulation should verify their individual setup/clearing-relationship and inform the exchange of any changes that may be required prior to the start of their Simulation testing activity.

The completion of functional preparations prior to production start is mandatory.

## 7.3 Technical preparation

In order to ensure technical readiness for Simulation, members/ISVs should consider the following topics:

- The changes for the following interfaces have to be implemented
  - T7 Enhanced Trading Interface ETI
  - T7 FIX Gateway
  - T7 Market and Reference Data Interfaces
  - Common Report Engine (new and changed reports)

T7 Release 7.0 will provide backwards compatibility for the T7 ETI version 6.1, i.e. participants using the interface layout version 6.1 will still be able to connect to T7 even after production launch of T7 Release 7.0.

T7 7.0 FIX Interface, Market and Reference Data Interfaces will **not provide** backward compatibility to the previous release.

- A technical connection to T7 systems needs to be established (if not existing).
- Internal resources for timely installation of Simulation software should be identified and confirmed.
- Related in-house systems should be set up to simulate subsequent processing.

## 8. Focus Day Overview

This chapter outlines which focus days will be offered. Focus days are planned and triggered by the Exchange. Specific actions have to be done by the Exchange to enable the scenario of the focus days. Focus days can be of technical nature (i.e. Market Data Service Failure), or of functional nature (i.e. Corporate Action). In either case participants cannot test without the Exchange taking action first.

Recommended test scenarios on the other hand can be done by the participants without any particular initiating action by the Exchange. Participants can run through these scenarios at their own discretion. These scenarios usually highlight new or changed features of the current release and participants are highly advised to perform these scenarios and verify their procedures and software used to be fit for these scenarios.

In the overview below, all focus days offered and recommended test scenarios for this release Simulation are listed and described:

### Technical Focus Days – Triggered by the Exchange (Derivatives and Cash):

- Partition specific Gateway Failover
- FIX Gateway Failover
- Matching Engine Failover and Failure, EOBI Failure
  - Matching Engine Failover
  - Matching Engine Failure
  - T7 Enhanced Order Book Interface (EOBI) Failure
- Market Data Services Failure
- T7 RDI Failure (*derivatives markets only*)
- ETI Session to Gateway Reassignment (*LF sessions only*)
- Matching Engine Processing Delay
- GUI (forced user log out)
- Move products from one partition to another (emergency procedure)

### Functional Focus Days – Triggered by the Exchange (Derivatives and Cash):

- Stressed market conditions / exceptional circumstances (**on request only**)
- Corporate Actions
- Market Halt (**on request only**)
- Product Halt (**on request only**)
- Instrument Suspend (*cash market only; on request only*)
- IPO (*cash market only; on request only*)

**Recommended Test Scenarios to be executed by participants – Derivatives:**

- Full Spread Matrix
- New Strategy Setup – complex instruments
- Trade Traceability
- Risk Events

**Recommended Test Scenarios to be executed by participants – Cash**

- T7 Entry Services
- Intraday Auction Only Trading Restriction
- Designated Sponsor Request

## **8.1 Technical Focus Days – Triggered by the Exchange**

Technical focus days will be offered on several occasions during the Simulation and will be triggered by the Exchange. Participants should use this opportunity to test the behaviour of the T7 trading and market data interfaces in conjunction with their own front office applications as well as their order book- and session management systems. Technical focus days will be provided simultaneously across multiple partitions (Cash & Derivatives).

### **8.1.1 Partition specific Gateway Failover**

In Q1/2018 partition specific gateways were introduced.

The new concept with two partition specific gateways per partition requires participant applications to be able to fail-over from one to the other gateway in case of gateway failure. This focus day will shut down both partition specific gateways belonging to one partition consecutively allowing participants to verify the failover mechanisms in their applications. Prior to the gateway failure participants are advised to insert several non-persistent vs. persistent and standard vs. lean orders and quotes in the Simulation environment. The exchange will cut gateway connections twice. Participants affected will therefore be able to check their internal failover processes.

Participants using backward compatibility mode:

Applications running in backward compatibility mode still use connection gateways. As a result of the gateway failover the active gateway will be disconnected and participants will have to request the gateway connection again via a Connection Gateway Request message with the existing session ID. This could happen automatically via implemented request on the participant side. If there is no automatic reconnection implemented on the participant side, the reconnection has to be done manually. In both cases the participant receives the IP address and port of the active PSG in the Gateway Response. (FYI: There is no “assignment”

for PSGs. There are two gateways if the first one fails then the second one takes over. The response of the Connection Gateway Request message contains the IP address and port of the PSG which is currently active).

Participants using T7 Release 7.0 mode:

With the introduction of T7 Release 7.0, the usage of the connection gateways becomes obsolete. Active ETI sessions will be disconnected from the gateway. There will be no automatic session failover if a connection to the gateway is lost. In this case, the participant application must establish a TCP/IP connection to the remaining, available trading Gateway.

All previously inserted nonpersistent orders and quotes will be deleted and users are logged out. There will be no (active) subscription to broadcast streams any longer. Participants will receive messages for all products where the matching engine deleted non-persistent orders (either lean or standard orders) and/or quotes of the lost session.

Please note: In case of a session loss / session logout the following (re-transmittable) messages will be generated for all products where the matching engine deleted non-persistent standard orders of the lost session:

- 10122 - (via listener and session data) for deleted orders:

follow-up information will be provided with 10112 for each element (order) of

<NotAffectedOrdersGrp> of 1012

➔ The Gateway Failover / Failure\_scenario will be offered between 15:00-16:00 CET.

### 8.1.2 FIX Gateway Failover

In case of a FIX Gateway Application Failover, all FIX sessions connected to this FIX Gateway will be disconnected and the corresponding port will be closed.

Customers should then activate the connection to the secondary FIX Gateway. The first FIX session logon to the secondary FIX Gateway may take some seconds. So if a connection or a session logon fails or is not responded to immediately, a second attempt should only be made after a few seconds (30 seconds recommended).

#### Schedule :

- 15:00 CEST: Application Failover FIX Gateway  
(IP address: 90.150.253.32 becomes unavailable for Derivatives  
IP address: 90.152.253.42 becomes unavailable for Cash)
- 15:15 CEST: Restart of FIX Gateway  
(IP address: 90.150.253.32 available again for Derivatives  
IP address: 90.152.253.42 available again for Cash)

- 15:30 CEST: Application Failover FIX Gateway  
(IP address: 90.151.253.32 becomes unavailable for Derivatives  
IP address: 90.153.253.42 becomes unavailable for Cash)
- 15:45 CEST: Restart of FIX Gateway  
(IP address: 90.151.253.32 available again for Derivatives  
IP address: 90.153.253.42 available again for Cash)

These tests are recommended for all T7 participants (Members/Vendors) using the T7 FIX Interface.

In the event of a FIX Gateway failure, active FIX sessions will be disconnected. FIX sessions may be resumed for the same SenderCompID (49) on the secondary FIX Gateway, using the secondary IP address and port number.

Recovery notes:

In the event that the disconnection was due to an outage on the FIX Gateway side, members should consider the following recovery mechanisms:

After reconnection of the FIX session, the FIX Gateway may receive a sequence number higher than the one expected and sends a Resend Request (2) message to the member.

The member should resend all potentially missed messages with PossDupFlag (43) = "Y", to indicate that a message may have been previously transmitted with the same MsgSeqNum (34).

Please note: No Gap Fill messages should be sent by the member during the resend series for application messages. Application messages should always be re-transmitted since the T7 FIX Gateway requires all missing application messages for the purpose of reconciliation with T7 Exchange's T7 trading system fallback.

If a participant sends Gap Fill messages during the resend series for application messages the related orders might not be accessible any more via the FIX Gateway and related order specific information will not be forwarded to the FIX session.

➔ The FIX Failover / Failure scenario will be offered between 15:00-16:00 CET

### **8.1.3 Matching Engine Failover and Failure, EOBI Failure**

The T7 Simulation system runs on separate partitions. Every process in the partition has a standby partner process that can take over in case the primary process fails. During Simulation, a failover and a failure of a matching engine will be simulated.

#### **8.1.3.1 Matching Engine Failover**

As a precondition, participants are advised to enter non-persistent orders and quotes in the Simulation environment before the matching engine failover takes place.



In this test scenario, the existing matcher processes in the partition will be terminated and the standby partner process will take over. Shortly after the takeover, participants will receive a 'Market Reset Event' message, stating the technical problem and including the message key which is the last reproducible order message.

Because of the failover, the products from the failed partition will still be tradable. A Market Reset Event message will be triggered. Non-persistent orders and quotes which were inserted earlier will be deleted after the restore of the order book.

There is a "failover time parameter" defined per product. If the failover happens in between that timeframe or the product did NOT have a continuous trading status prior to the corruption, the product will change to product state "halt", after the failover is finished.

Afterwards an order book replay will be sent including the persistent orders, which were recoverable. Participants with low frequency sessions will receive an extra end of replay message on a product level. Participants with high frequency sessions will only receive the previously mentioned Market Reset Event Message. Hence, there are no extra deletion messages.

The Matching Engine failover triggers automatically an EOBI failover.

### **8.1.3.2 Matching Engine Failure**

For the execution of a matching engine failure both matcher processes will be crashed for a partition in Simulation. The test case will have an impact on all products available on this partition in permanent Simulation. As long as the partition is not available, i.e. not restarted by the exchange, participants will neither be able to receive public market data for products linked to that partition, nor will they be able to enter orders.

A Market Reset Event message will be sent out to participants, when the matching engine has been restarted. Additionally the market data service will still be available but will send only unchanged data to participants.

The Matching Engine failure triggers automatically an EOBI failure as well.

### **8.1.3.3 T7 Enhanced Order Book Interface (EOBI) Failure**

Prior to the focus day, participants should check whether they are able to receive market data from the T7 Enhanced Order Book Interface (EOBI), i.e. they should try to send some orders on benchmark futures products and equities which are available in the T7 permanent Simulation. Public market data information from T7 EOBI will be provided in packages/UDP datagrams marked with a MarketSegmentID, i.e., product identifier; PartitionID; ApplSeqNum (continuous numbering format); Packages are sent over redundant multicast address and port combinations. Each package is uniquely identified by its MarketSegmentID and ApplSeqNum combination. In addition to the packet sequence numbering, individual messages are sequenced by MsgSeqNum, which is contiguous per MarketSegmentID.

In case of an EOBI Failure, both the ApplSeqNum and the MsgSeqNum for a specific MarketSegmentID will restart from 1.

An EOBI Failure is triggered together with a matching engine failure. Participant applications should notice this, whenever an ApplSeqNum is received which is smaller than one which has already been received for a specific MarketSegmentID and multicast address:port combination. Whenever a participant application

detects a restart of the MsgSeqNum as well, it must rebuild all order books for this MarketSegmentID again from the T7 EOBI snapshot channel.

All non-persistent orders entered prior to the failover will be deleted. The receiving application needs to invalidate its view of the order book and refresh once an explicit message has been received containing new information.

➔ The Matching Engine and EOBI Failover / Failure scenario will be offered between 15:00-16:00 CET.

### **8.1.4 Market Data Services Failure**

Prior to the focus day participants should check whether they receive market data from T7, i.e. they should try to send some orders on products which are available in permanent Simulation. Market data information will be provided in packages marked with a SenderCompID; PartitionID; PacketSeqNum (continuous numbering format); the MessageSeqNum (continuous per SenderCompID multicast address and port combination) and a MarketSegmentID. The SenderCompID always remains constant for a product during the whole business day, if there is no failover.

When the market data failure is initiated by DBAG, a crash will be simulated within the partition for market data services. During this time participants can try to insert new orders and quotes for that product. As a result, they will receive a message that the associated partition is not available. As long as the partition is not available, i.e. not restarted by the exchange, participants will neither be able to receive market data for products linked to that partition, nor be able to enter orders. In this test scenario, all partitions in Simulation will be affected and therefore the test will refer to all products, which are available at that time in the permanent Simulation.

Participants can identify this failover scenario by comparing the SenderCompID value with the previous value. A new SenderCompID, which is available in the packet header and in each data message for incremental and snapshots, indicates the partition failure. Additionally the PacketSeqNum will be reset to 1.

Once this condition is observed, it can be assumed that a fail-over scenario took place and the rebuild of the order book can be started. All non-persistent orders entered prior to the failover will be deleted. The receiving application needs to invalidate its view of the order book until an explicit message has been received containing new information.

➔ The Market Data Services Failure scenario will be offered between 15:00-16:00 CET.

### **8.1.5 T7 RDI Failure (Only for derivatives market)**

In this test scenario both the failover and the restart of the T7 RDI will be simulated (EEX RDI ist independent of T7 RDI and will not be affected by the T7 RDI Failure). As a precondition for the tests, participants are

advised to create some complex instruments in the Simulation environment before the failover and restart of the RDI are performed.

In the first part of the test scenario when the T7 RDI fails over, a new initial reference file will be generated with a new file set identifier. This file will contain any complex instruments, already created and deleted during the day, i.e. the entire history.

In the second part of the test scenario, when the T7 RDI is restarted, a new initial reference file will be generated with a new file set identifier. This file contains the existing complex instruments but not the entire history of creations and deletions.

➔ The RDI Failure scenario will be offered between 15:00-16:00 CET.

### **8.1.6 ETI Session to Gateway Reassignment**

Participants interact with the trading gateways by means of low frequency (LF) sessions. The primary and secondary gateway, to which a LF session is assigned, is contained in the response to the gateway request message which is issued as the first step in the connection process. Under normal circumstances the assignment of the LF session to a trading gateway will not change on a day-to-day basis but either as a result of hardware failure or due to the re-assignment of sessions for load balancing purposes the session to gateway assignment can and will change.

Participants must not only ensure that their applications support the automatic gateway reassignment but also that their application can handle a logon to the primary or secondary gateway should one of the logins fail. Hardcoding of gateway assignments may lead to the inability to connect to the trading gateways.

To assist participants in preparing for the ETI session to gateway reassignment and to ensure that trading applications are able to handle the scenario once it occurs, focus days will be offered whereby the LF session to gateway assignment will be changed for all sessions.

There will be two focus days for this scenario whereby both focus days will take place in the same week. In the Simulation environment the end-of-day processing usually takes place on a Tuesday, Wednesday and a Thursday.

In the end-of-day processing on the first day where the focus day is specified, all session to gateway mappings will be deleted. Once the Simulation environment becomes available again after the end-of-day processing, the assignment of the sessions to the trading gateways will be performed on a “round robin” principle and there will be no way to ascertain which gateway will be assigned in advance. Applications will be required to process the response from the gateway request message to find out which trading gateways can be used for a particular session.

A list of all the possible trading gateways together with their IP addresses is listed in the document “T7 Exchange and Settlement Network Access” document.

In the end-of-day processing on the following roll over day, the original LF session to gateway mappings will be restored.

The ETI to Gateway Session Reassignment scenario will be offered over a time spanning two roll over days with part one deleting all existing mapping and part two restoring the original session to gateway mappings. Please note: Partition specific gateway connectivity is not impacted because there is no preassignment to these gateways.

**Please note**

This focus day scenario is only relevant for participants using ETI 6.1 backward compatibility for T7 Release 7.0 Partition specific gateway connectivity is not impacted because there is no preassignment to these gateways. Furthermore to reduce the complexity of the ETI session logon process, the connection to the T7 trading system via the Connection Gateways will no longer be necessary with T7 Release 7.0. Participants can directly logon to any of the LF trading gateways for LF sessions. (The IP addresses of the active/ standby PS gateways and the LF trading gateways are provided in the N7 Network Access Guide available via the (Xetra/ Eurex) website.)

### 8.1.7 Matching Engine Processing Delay

This focus day scenario is provided to assist participants in testing the very rare event where massive processing delays occur on a partition. In this scenario the following events will be triggered:

All non-persistent Orders and Quotes will be deleted for the affected product(s).

Product-specific DeleteAllOrderQuoteEventBroadcast messages will be sent to all ETI and FIX sessions with MassActionReason set to (111) Product\_temporarily\_not\_tradable.

For a minimum time period of 10 seconds or until the slow processing is resolved, all transactions except order deletions will be rejected with SessionRejectReason set to (102) Service\_Temporarily\_Not\_Available and VarText 'TRANSACTION REJECTED DUE TO SLOW PARTITION'

In the event that a product is temporarily not tradable, participants will be informed when the matching engine will accept transactions again by a TradingSessionStatus message (MsgType (tag 35) = "h") specifying TradSesEvent (tag 1368) = 105 ("Service Resumed").

**Please Note:** Participants will still be able to send deletion requests for any persistent orders which they would like to remove.

This focus day scenario is performed for the following markets and products:

- XEUR: AFR
- XETR: DE0006599905
- XDUB: IE00BJMZDW83
- XVIE: AT0000764626

Participants are requested to check that their applications can correctly handle order / quote deletions and transaction rejections due to the slow partition state.

➔ The Matching Engine Processing Delay scenario will be offered between 15:00-16:00 CET.

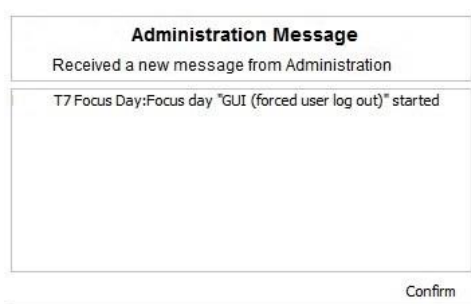
### 8.1.8 GUI (forced user log out)

The GUI Focus Day scenario is provided primarily to make participants aware of a function within T7 whereby in an emergency/exceptional situation T7 Operations can not only send messages directly to the users screen but also force the termination of the GUI itself. In addition, the focus day is also provided to make participants aware of the effects of a full GUI environment restart. The GUI (forced user log out) focus day will be subdivided into three parts:

- Send Admin Message only
- Admin Message + Forced Trader GUI Shutdown
- Full GUI environment restart

#### 8.1.8.1 Send Admin Message only

All GUI instances (both Admin and Trading) logged in at the point when the focus day is initiated will receive a message “T7 Focus Day: Focus day “GUI (forced user log out)” started”. This message will appear in a new popup window.



This window can be closed by pressing the Confirm button.

#### 8.1.8.2 Admin Message + Forced Trader GUI Shutdown

After this first message the following message will be send 10 minutes prior to the GUI environment shutdown: “T7 GUI Focus Day: Automatic GUI shutdown has been triggered and the GUI environment will be restarted”. On the Trader and Admin GUI the following pop-up windows will be displayed:



The colour of this popup window will turn to yellow 15 seconds prior to the forced shutdown and turns red for the last 5 seconds.

### 8.1.8.3 Full GUI environment restart

Following a full restart of the GUI environment in Simulation will be performed. On the day where the focus day is scheduled, participants will be encouraged to suspend orders so that the effect on suspended orders caused by a GUI restart can be observed. Suspended orders will all be deleted, the rest of the order book will be unchanged after a restart.

➔ The GUI (forced user log out) focus day scenario will be offered between 15:00-15:30 CET.

### 8.1.9 Move products from one partition to another (emergency procedure)

This focus day scenario is intended to simulate the unlikely event that products need to be moved from one partition to another before the start of trading.

Under normal circumstances, the assignment of products to a partition will not change on a day-to-day basis but either as a result of hardware failure or due to a re-configuration, the assignment of products can and will change.

In this focus day scenario all products / Product assignment groups outlined below will be moved from one partition to another prior to the start of the trading phase (closed & pre-trading) in the T7 Simulation environment.

As a consequence of the product move from one to another partition the entire T7 system will be restarted. All non-persistent orders, quotes entered and recoverable broadcast streams disseminated before restart will be deleted. Please be aware that persistent orders will be moved to the other partition too and are part of the orderbook restatement. The PartitionID in the reference data, product snapshot and packet header for EMDI and EOBI for the affected product(s) will change. When the T7 RDI is restarted, a new initial reference file will be generated with a new file set identifier. Reference Data via RDI and RDF must be reprocessed by client applications following the restart. The SenderCompID in the Market Data for the product will change following the restart. The service on which the market data is published first for EMDI / EOBI may change (even to odd or vice versa). The multicast addresses on which the market data is disseminated will not change.

Participants must ensure that their applications support the automatic reassignment of products. Hardcoding of product to partition assignments may lead to the inability to identify or trade these products.

This focus day scenario is performed for the following markets and products:

XEUR products: CONF, FBON, FBTM, FBTP, FBTS, FGBL, FGBM, FGBS, FGBX, FOAM, FOAT, FSWL, GE02, GE05 & GE30

XETR product assignment groups: GER1, MDX1, SDX1, STX6 & TDX1.

The Move products from one partition to another one (emergency procedure) focus day scenario will be performed in the morning after a roll over run and should be completed before 11am (CET/CEST). Please note: The products which have been moved from one partition to another, will remain on the “new” partition until this focus day scenario is repeated.

## 8.2 Functional Focus Days – Triggered by the Exchange

The exact dates for the functional focus days triggered by the exchange are displayed in the Simulation calendar available on the websites

[www.eurexchange.com](http://www.eurexchange.com) -> Technology -> Simulation Calendar

[www.xetra.com](http://www.xetra.com) -> Trading -> Trading calendar and trading hours

### 8.2.1 Corporate Actions

#### Derivatives Market:

Participants will have the opportunity to test Corporate Action processing. On the first focus day, i.e. before end-of-day processing starts, participants are requested to generate positions in T7 in the defined products to check the system behaviour on the effective focus day (second business day).

#### Cash Market:

Simulation Business Day 1:

DBAG maintains the Cum-Indicator, Ex date and the dividend amount of the instruments.

Simulation Business Day 2:

The Cum-Indicator is set and visible for participants. The participants should now have open orders in POSTR. These orders will be deleted during the following roll over run. Furthermore, the deletion messages including the order deletion reasons will be sent.

Simulation Business Day 3 (Ex-day): The participants see the Ex indicator and the reference price is reduced accordingly by the dividend amount.

The exact dates and products of the Corporate Actions scenario are displayed in the current Simulation calendar available on Exchange's website.

The exact dates and products of the Corporate Actions scenario are displayed in the current Simulation calendar available on either [www.eurexchange.com](http://www.eurexchange.com) or [www.xetra.com](http://www.xetra.com).

### 8.2.2 Stressed market conditions / exceptional circumstances (On request only)

The regulatory relevant states of market conditions for market making will be normal market conditions, stressed market conditions and exceptional circumstances. Stressed market conditions will be established on product level for the derivatives market and instrument level for the cash market, whereas exceptional circumstances will typically affect the whole market. The product will be in normal market conditions, when



neither stressed nor exceptional market conditions apply. There are no market making obligations during exceptional circumstances.

Automatically triggered stressed market conditions will have a fixed duration (e.g. 10 minutes). Ongoing automatically set stressed market conditions will be prolonged by this time period, when the trigger conditions are detected again. The following trigger events for automatically set stressed market conditions will be supported, depending on the type of the affected product:

- **Derivatives Market:**

- Simultaneous significant change of price and volume – applies to equity index futures, single stock futures and ETF futures.
- End of a volatility interruption – applies to equity index futures, single stock futures and ETF futures.
- Stressed Market Signals in a related futures product – in case a futures product is in stressed market conditions and there is a corresponding options product with the same underlying, the options product will be automatically set in stressed market conditions. Note that a volatility interruption in such a futures product is considered as a stressed market signal. Such products are ETF options, equity options and equity index options.

During stressed market conditions, the maximum quote spread for quotes and Request for Quote requests is widened and the minimum quote quantity for quotes can be changed.

- **Cash Market:**

- significant short-term change in price, i.e. the cash market instrument is in an extended volatility interruption on T7,
- significant short-term change in volume, i.e. significantly above-average traded volume in the price determination after an extended volatility interruption.

According to the regulatory technical requirements, T7 has to support the state of exceptional circumstances under the following triggering conditions:

- Extreme volatility – a state of extreme volatility is established when the majority of products, which are subject to market making regulation is in stressed market conditions or in a volatility interruption. The state of extreme volatility is set for the whole market.
- War, industrial action, civil unrest or cyber sabotage – this state is declared by the Exchange Management Board with simultaneous effect for the whole market.
- Disorderly trading conditions at the exchange – this state is declared when there is either a significant increase of processing times, or multiple erroneous executions of transactions, or loss of connectivity

for many Participants. The state of disorderly trading conditions is declared by the Exchange Management Board with simultaneous effect for the whole market.

- Suspension of pre-trade transparency obligation – the declaration of this state rests upon the decision of the responsible regulator. This condition applies per product.

Exceptional circumstances will be declared for a period of one hour and will end as soon as the triggering conditions are no longer met. The state of exceptional circumstances may be extended until the end of the business day, if the criteria are repeatedly breached. Exceptional circumstances will end automatically at the end of the business day. In case the triggering conditions remain in effect, they will be declared again on the next business day.

T7 will publish exceptional circumstances only via news messages (Eurex webpage, Xetra webpage, T7 GUI and ETI). Exceptional circumstances will not be communicated via the T7 market data interfaces. Thus, there might be situations where stressed market conditions in a product are set during a state of exceptional circumstances. In this case, exceptional circumstances always trump stressed market conditions, regardless of the sequence of setting the regulatory trading conditions.

On the Focus Day “Stressed market conditions / exceptional circumstances” first “Stressed market conditions” will be triggered by the exchange for 3 products for a defined time period of 10 minutes.

Afterwards Exceptional circumstances will be declared for the period of one hour for the whole market.

### **8.2.3 Market Halt (On request only)**

As a possibility to reflect a market halt in T7, DBAG offers to schedule the Simulation of the market halt scenario on request.

#### Test scenario and expected result:

Prior to the planned Market Halt participants are recommended to enter non persistent orders and quotes and persistent orders in any products in the affected market. As a result of the market halt, products will not be tradable between the given times. In this scenario all non-persistent orders and quotes will be deleted after the market reset and participants must re-enter those orders and quotes. Persistent orders will stay in the system.

Additionally the following message will be sent:

10308 - (ETI: Mass Cancellation Event)

The exact dates of the Market Halt scenario are displayed in the current Simulation calendar available on the websites :

[www.eurexchange.com](http://www.eurexchange.com) -> Technology -> Simulation Calendar

[www.xetra.com](http://www.xetra.com) -> Trading -> Trading calendar and trading hours

## 8.2.4 Product Halt (On request only)

As a possibility to reflect a product halt in T7, DBAG offers to schedule the Simulation of the product halt scenario on request.

Test scenario and expected result:

Prior to the planned Product Halt participants are recommended to enter non persistent- and persistent orders and quotes in the affected products. With the transition of the trading phase to HALT, this product will not be tradable between the given times in T7. In this scenario, all non-persistent orders and quotes will be deleted after the market reset and participants must re-enter them. Persistent orders for the affected product will stay in the system. Additionally the following message occurs:

*10308 - (ETI: Mass Cancellation Event aka DeleteAllOrderQuoteEventBroadcast aka BC CleanupOQ)*

*OrderMassActionReport (UBZ) messages will be sent to all FIX sessions.*

## 8.2.5 Instrument Suspend (Cash Market; On request only)

As a possibility to reflect an instrument suspend in T7, DBAG has offers the Simulation of the following focus day on request.

Test scenario and expected result:

Prior to the planned Instrument Suspend participants are recommended to enter non persistent- and persistent orders and quotes in the affected instrument. As a result this instrument will not be tradable between the given times in T7. In this scenario all orders (persistent and all non-persistent) and all quotes will be deleted after the market reset and participants must re-enter them. Additionally the following message occurs:

*10308 - (ETI: Mass Cancellation Event aka DeleteAllOrderQuoteEventBroadcast aka BC CleanupOQ)*

## 8.2.6 IPO (Cash Market; On request only)

As a possibility to reflect an IPO auction in T7, DBAG offers the Simulation of the following focus day scenario on request.

An IPO auction is used for the inclusion of an instrument in the secondary market and is a special version of an auction. Like in an auction, orders and quotes can be entered, modified and deleted.

In contrast to the standard auction Market Supervision is able to enter a matching range on behalf of the lead bank during the IPO auction call phase. The price determination is restricted to this price range.

Market participants will only be informed about the price range. Market data will not be published at any time of the IPO auction phase.

Before the IPO auction is manually terminated, Market Supervision is setting the instrument state from Auction to Freeze in order to control the order book situation.

During this state, any activity that changes the order book is not possible.

After the IPO auction is terminated by Market Supervision the auction price determination takes place. The IPO auction is directly followed by an intraday auction call phase.

This focus day will allow the members to practice the interaction of their activities regarding the first price determination after an initial public offering (IPO). The focus will encompass the common trading and processing features in initial public offering. The actions will be focused on equities.

## 8.2.7 Eurex EnLight

As a possibility to test the functional enhancements for the selective RFQ platform Eurex EnLight together with other market participants, DBAG offers Eurex EnLight Simulation Days (please refer to the simulation calendar for the exact dates).

Products available in the simulation environment of Eurex EnLight are:

- Selected Fixed Income Options (incl. OGBS, OGBM, OGBL)
- Selected Equity Options on Swiss Underlyings
- Selected Equity Index Options (incl. OESX, ODAX, OSMI)

On EnLight Simulation Days, market participants can simulate the work-flow of sending out or responding to an RFQ via the Eurex GUI or ETI. Eurex offers market participants the possibility to include the Trader IDs "MNOHBTOM001, MNOHBSIM001 and ABCFRSIM001" (Eurex internal Trader IDs) in their RFQs to receive responses.

In addition, members can contact Eurex via e-mail to [EnLight\\_Improve@deutsche-boerse.com](mailto:EnLight_Improve@deutsche-boerse.com) to indicate that they are interested in receiving RFQs from the above Eurex trader IDs on these focus days, or that they are interested for Eurex to share their Trader IDs with other market participants for the purpose of testing EnLight.

### 8.3 Recommended test scenarios executed by participants – Derivatives

The following test scenarios should be executed anytime by participants in Simulation. There are no special tasks to be performed by the exchange.

#### 8.3.1 Full Spread Matrix

In T7 it is possible to set up and trade products with up to 20 different calendars spreads.

The exchange can configure which calendar spreads of a futures product are considered for synthetic matching; a synthetically linked full spread matrix is achieved by considering all calendar spreads of a futures product.

The following products are configured with a synthetically linked full spread matrix in the permanent Simulation:

Group	Product	Currency	Product Name
FINT	FEU3	EUR	THREE-MONTH-EURIBOR FUT. (ACI)
FINX	FEXD	EUR	FUT ON EURO STOXX 50 INDEX DIV
FVOL	FVS	EUR	FUT ON MINI VSTOXX

#### 8.3.2 New Strategy Setup – complex instruments

Typically, complex instruments are requested by traders, however, some futures spreads are created by the exchange by default. Complex instruments requested by traders with open orders valid beyond the current trading day will be available the next day.

It is possible to have different trading parameters per instrument type, for example allocation schemes and price validations. Therefore, different instruments of the same product can vary in their trading behaviour.

Please note: Strategies are always created on a temporary basis and are cancelled during the end of day processing if their order book is empty.

Traders may request complex instruments from T7 at any time during the Simulation. If the requested complex instrument matches a predefined standard option strategy, then the matching engine will create a standard option strategy.

### **8.3.3 Trade Traceability**

T7 provides improved trade traceability, allowing orders to be linked to executions, trade confirmations, and trades in clearing for simple and complex instruments.

While sending a new order participants can provide a client order ID and up to three free text fields, which are optional for Eurex ETI. For each new order received by Eurex Exchange a separate order ID by the exchange is assigned which is unique and returned to the participant on all private messages.

For every match event T7 assigns identifiers unique within product and business day, to each aggregated price level, every order execution and every trade.

For the matching of a complex order in addition to the order leg, the execution ID and order leg execution ID is provided for each leg of the complex instrument match.

### **8.3.4 Risk Events**

Risk parameters will be triggered due to defined trading volume or quantity limits. Limits can be set by Clearing Members for their Non-Clearing Members (Exchange Participants) or by Non Clearing Members themselves on an intraday basis. There are three levels of limitation which can be defined by participants and is the same for all business units.

#### *1. Alert message*

The user receives a popup message which informs him that he has exceeded a predefined limit, no further actions happen.

#### *2. Threshold message*

The user is informed that he has exceeded the second limit and therefore a throttle mechanism is implemented for trading. For traders it is not possible to trade in a general way and volume as the trade volume is limited as per the threshold limitation given by the clearing members.

#### *3. Blocking message*

With this scenario, trading is disabled for the respective trading user if he exceeds his trading limits or any other given quantity limits for trading. User entitlements are independent of those extra limitations.

## **8.4 Recommended test scenarios executed by participants – Cash**

The following test scenarios should be executed anytime by participants in Simulation. There are no special tasks to be performed by the exchange.

### 8.4.1 T7 Entry Service

To support members during their testing of “T7 Entry Services”, DBAG has planned the following test scenarios, which are differentiated by the availability of the T7 Entry Services and On-exchange trading for dedicated instruments:

Scenario	Instrument	Trade Entry Services – Product State	On-exchange Trading – Product State
1	US8793822086	On	Halted
2	SE0000108656	Halted	Continuous

1. TES possible and On-exchange trading not possible for instrument US8793822086

In this scenario the instrument US8793822086 is suitable for off-book transactions but not for On-exchange trading. If the user enters orders in On-exchange trading, he will receive an error message, which informs him that the transaction is not allowed in current instrument state, no further actions will happen.

2. TES not possible and On-exchange trading possible for instrument SE0000108656

In this scenario the instrument SE0000108656 is suitable for On-exchange trading but not for off-book transactions. If the user enters TES trades, he will receive an error message, which informs him that the transaction is not allowed in current product state, no further actions will happen.

### 8.4.2 Intraday Auction Only Trading Restriction

Participants have the possibility to flag an order as Intraday Auction Only (IAO) order by setting TradingSessionSubID to Intraday Only Auction in ETI/ FIX or choosing the Restriction IAO in the Order Entry related GUI views. In case an order is flagged this way, it will only participate in scheduled intraday auctions, i.e. no opening, no closing, and no volatility auction. As with all auction only orders, an order flagged as IAO will receive a new priority time stamp each time an intraday auction begins, e.g. the order is activated for the intraday auction.

Please note that intraday auctions are scheduled for all instruments in T7 (XETR) Simulation with trading model type Continuous Trading on each roll over day at 12:00 and 14:00 CE(S)T.



### **8.4.3 Designated Sponsor Quote Request**

Participants have the possibility to decide who will be informed about their Request for Quote (RfQ): either all Participants, or Market Makers and Designated Sponsors, or only the Designated Sponsors of the instrument for which the RfQ is sent.

For each individual RfQ, Participants are able to decide if their business unit ID is disclosed to the target Participants of the RfQ, i.e. to all market Participants, or to Market Makers and Designated Sponsors, or only to the Designated Sponsors of the instrument.

During the recommended test scenario “Designated Sponsor Quote Request”, members are requested to send RfQs particularly to Designated Sponsors.

## 9. Documentation

T7 Release 7.0	Eurex	Xetra	Combined	Q1 2018			Q2 2018			Q3 2018			Q4 2018											
				Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec									
<b>Release Notes</b>																								
T7 Release 7.0, Release Notes	x	x							◆			●												
<b>Simulation</b>																								
Participant Simulation Guide			x									●												
<b>Overview and Functionality</b>																								
T7 Functional and Interface Overview			x									●												
T7 Cross System Traceability			x									●												
T7 Functional Reference			x									●												
T7 Incident Handling Guide			x									●												
Participant and User Maintenance Manual	x	x										●												
Contract Notes Description		x										●												
Known Limitations			x									■				●								
<b>GUI Solutions</b>																								
Trader, Admin and Clearer GUI – User Manual	x	x										■				●								
T7 Trader, Admin and Clearer GUI – Installation Manual			x									■				●								
<b>Trading Interfaces</b>																								
T7 Enhanced Trading Interface – Manual incl. Repository and Header files			x									◆	■			●								
T7 Enhanced Trading Interface – XML Representation			x									◆	■			●								
T7 FIX Gateway - FIX 4.2 and 4.4 Manual incl. Fiximate and Repository			x									◆	■			●								
<b>Market and Reference Data Interfaces</b>																								
T7 Market-, Enhanced Order Book- and Reference Data Interfaces, Manual incl. Fast Message Template, Repository & FIXML Schema Files			x									◆	■			●								
Xetra Instrument Reference Data Guide		x											●											
T7 Extended Market Data Services – Manual incl. Fast Message Template and Underlying Ticker Data			x										■			●								
<b>Reports</b>																								
XML Reports - Reference Manual	x	x											■			●								
Common Report Engine User Guide			x											●										
<b>Network Access</b>																								
N7 Network Access Guide			x										●											
<b>Rules &amp; Regulations</b>																								
Xetra Rules & Regulations		x															●							

◆ Preliminary Version   ■ Simulation Version   ● Final Version

The documents will be available on the websites

[www.eurexchange.com](http://www.eurexchange.com) > Technology > Eurex Exchange's T7 > System Documentation > Release 7.0

[www.xetra.com](http://www.xetra.com) > Technology > T7 trading architecture > System Documentation > Release 7.0

## 10. Support

The standard support times of the Exchange will be in effect during the Simulation phases. The helpdesk departments and further information sources are provided in the following section.

### 10.1 Contacts and support hours

The following helpdesks provide first level support for specific topics from Monday till Friday:

#### 10.1.1 Group Client Key Account Management

Phone: individual number to your Group Client Key Account Manager (09:00 - 18:00 CET)

- Participants readiness activities
- Participant preparation requirements
- Participant setup questions for Simulation and production
- Participant data changes for Simulation and production
- ISV related queries

#### 10.1.2 Functional Helpdesk Eurex

Phone: +49-69-211-1 12 10 (07:00 - 22:30 CET)

- Functional trading related issues for trading
- Functional focus days
- Product data management
- Market Control
- Simulation participation and execution

#### 10.1.3 Functional Helpdesk Xetra

Phone: +49-69-211-1 14 00 (09:00 – 18:00CET)

- Functional trading related issues
- Functional focus days
- Product data management
- Market Control

- Simulation participation and execution

#### **10.1.4 Helpdesk Clearing Data Control**

Phone: +49-69-211-1 24 53 (08:00 - 20:00 CET)

- Clearing functionality
- Entitlement Management
- Participant- and user data management

#### **10.1.5 Customer Technical Support**

Phone: individual VIP number (24 hours, Monday - Friday)

- All Technical issues related to the Simulation environment (e.g. connectivity issues)
- Technical focus days

### **10.2 Further sources of information**

Changes and further information regarding the T7 Simulation will be provided via the following channels:

- Circulars
- Info-Mail
- Implementation News on Eurex Exchange's website for T7 under following path:

[www.eurexchange.com](http://www.eurexchange.com) -> Technology -> Eurex Exchange's T7 -> Implementation News

[www.xetra.com](http://www.xetra.com) -> Technology -> Implementation News