ISE Xetra Release 17.0

Simulation Guide for ISE Xetra Members of the

Irish Stock Exchange

Release Date: 25th August 2017

Abstract

This document provides information to enable member firms' successful participation in the ISE Xetra Release 17.0 simulation. The information contained in this document covers the necessary preparation and execution activities.

Please note: The production introduction of Xetra Release 17.0 is planned for **20th November, 2017**.

Contents

1   Introduction

This document describes the simulation for Xetra Release 17.0. The structure is as follows:

Chapter 1 – Introduction

An overview of Xetra Release 17.0 simulation is given. The intended audience is addressed and the objectives of the simulation are outlined.

Chapter 2 – Simulation

General information about the simulation and participating systems is given.

Chapter 3 – Simulation Schedule

The simulation and overall introduction schedule are presented.

Chapter 4 – Member Activities

The general member-required activities, including preparation and activities recommended for simulation execution are explained.

Chapter 5 – Simulation Support

Contact numbers and availability times of the helpdesks involved are listed.

Chapter 6 – Simulation Setup

All relevant information for simulation on the Xetra simulation environment is summarised in this chapter.

Chapter 7 – Focus Days

This chapter gives an overview of the Focus Day scenarios

Chapter 8 - Appendix

Available XML and text reports are listed. Documentation references are given.

Abbreviations, Acronyms and Definitions

API	Application Programming Interface
ASE	Advanced Simulation Environment
CCP	Central Counterparty
CEF	DBAG's Real Time Data Feed
DBG, DBAG	Deutsche Börse Group, Deutsche Börse AG
EnBS	Enhanced Broadcast Solution
ETS	Enhanced Transaction Solution
FWB	Frankfurter Wertpapierbörse
GATE	Generic Access to Exchanges
ISE	Irish Stock Exchange
ISE Xetra	The electronic trading system of the ISE for reporting of off order book on Exchange trades
MDI	Market Data Interface
MIS	Member Integration System Server
MS	Market Supervision
PSE	Permanent Simulation Environment
VALUES	Virtual Access Link Using Exchange Services

1.1   SIMULATION SCOPE

For ISE members the main focus of the Release 17.0 simulation is to re-test the off order book trade reporting functions which will be maintained with this release.

The production start for Xetra Release 17.0 is scheduled for November 20th, 2017.
For more details, please refer to the document "Functional Description" which can be downloaded from the Irish Stock Exchange website, www.ise.ie, under the following path:

<p align="center">Trading Members > Equity Trading > Xetra Sign-In</p>

1.2   INTENDED AUDIENCE

This document is a guide for the members' project coordinators and testers responsible for coordinating the introduction of Xetra Release 17.0. Various member departments as well as third parties may be involved in simulation efforts, such as:

- Trading departments

- Back office and other settlement functions

- IT departments

- Network operations (WAN and LAN)

- Organisational departments

- Software vendors

We recommend that this document is distributed as soon as possible within the members' project teams and to the involved line organisations.

1.3   OBJECTIVE OF SIMULATION

The purpose of Xetra Release 17.0 simulation is mainly to provide an opportunity for members to test in preparation for production introduction. The key objectives are:

Early issue identification by member firms, ISE and Deutsche Börse

By providing a production-like setup where possible and by encouraging early and frequent participation by member firms, potential issues can be detected in advance of production

Risk minimisation

Production-like back end and front end conversion processes will be simulated, and member firms will be given the opportunity to gather experience in installation procedures

2   Simulation

Xetra Release 17.0 simulation is provided from Monday, **September 11th 2017** until Friday, **November 17th 2017**. Within this timeframe member firms are supported via focus days where relevant.

2.1   GENERAL INFORMATION

Simulation will be set up and run as production-like as possible with respect to functional and technical aspects. Software, interfaces, tools, techniques and processes have to be used according to their use in production.

In preparation for the conversion of the simulation environment to Xetra Release 17.0 software, the simulation environment will not be available from **August 26th 2017** to **September 10th 2017** inclusive.

The installation of the Xetra Release 17.0 simulation kit is mandatory for all member firms.

2.2   PARTICIPATING SYSTEMS

The following table gives an overview of the other systems participating in Xetra 17.0 simulation:

System	Short Description	Participating dates
CEF	DBAG Real Time Data Feed, used for Block-trade delay and data dissemination. CEF will run on the CEF simulation environment between Deutsche Börse and Market Data Vendors.	10/10 – 10/11
Common Report Engine	Service which allows the centralised provision of reports.	11/09 – 10/11

Table 1: Overview of the Xetra Release 17.0 simulation systems

2.3   SIMULATION CALENDAR

The detailed simulation calendar with a day-by-day overview (and focus days highlighted) can be downloaded from the Irish Stock Exchange website under the following path:

www.ise.ie > Trading Members > Equity Trading > Trading System > ISE Xetra

The business days in ISE Xetra simulation always correspond to the trading days providing an end-of-day batch processing. During member simulation, two batches per week are provided as standard. To operate under production like conditions or for special test scenarios, deviations with three batches per week are planned.

Batch days alternate with online days on which the ISE Xetra simulation environment remains open for 24 hours. Additionally the simulation environment is accessible on weekends to give members the opportunity to test long-lasting and complex simulation scenarios outside of common working hours.

On batch days, the simulation will close earlier than production in order to avoid any influences on end-of-day processing operations in production. Post-trading in ISE Xetra simulation is scheduled for 14:30 (Irish time).

3 Simulation Schedule

3.1 OVERVIEW OF SOFTWARE DELIVERY

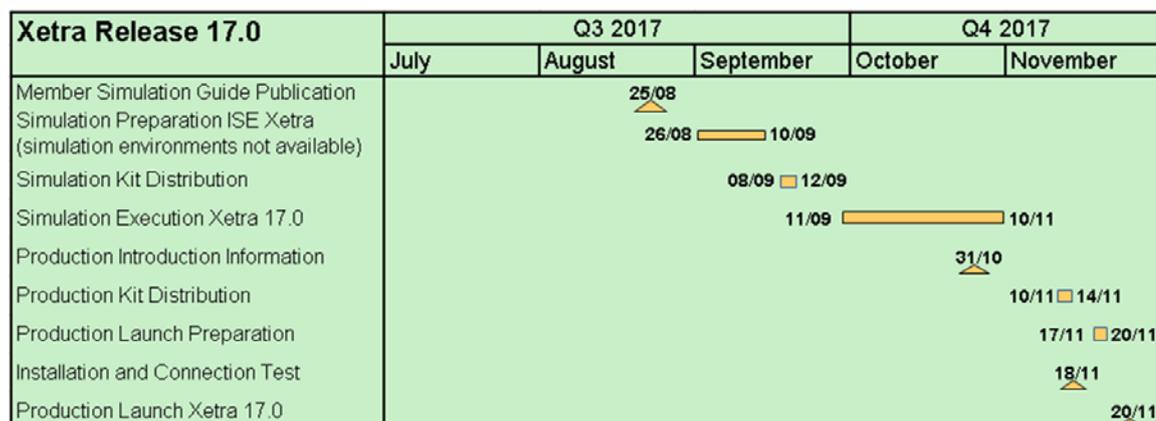The following key dates should be considered as the basis for simulation and production planning:

Xetra Release 17.0	Q3 2017			Q4 2017	
	July	August	September	October	November
Member Simulation Guide Publication		25/08			
Simulation Preparation ISE Xetra (simulation environments not available)		26/08 ▭ 10/09			
Simulation Kit Distribution			08/09 ▭ 12/09		
Simulation Execution Xetra 17.0			11/09 ▭ 10/11		
Production Introduction Information				31/10	
Production Kit Distribution					10/11 ▭ 14/11
Production Launch Preparation					17/11 ▭ 20/11
Installation and Connection Test					18/11
Production Launch Xetra 17.0					20/11

Figure 1: Xetra Release 17.0 introduction schedule

3.1.1 Timetable for simulation

Simulation days will be either batch days or non-batch days (online days). After batch processing, the online day starts at 9:00 (Irish time). Online processing ends at 15:00 (Irish time) on a batch day. On online days the system is permanently up and running. The business days correspond to the trading days, providing end-of-day processing.

The following table shows an overview of the batch day schedule for the back ends:

Phase	ISE Xetra (Irish time)
Pre-Trading	09:00 – 09:15
Opening Auction	09:15 – 09:30
Main-Trading	09:30 – 14:30
Closing Auction	14:30 – 14:45
Post-Trading	14:45 – 15:00
Ready for Batch	15:00
Report Distribution	21:45 – 05:00

Table 2: Timetable

3.1.2 Operating times

The following table provides an overview of the operating times for ISE Xetra.

System	Xetra Online Day (Irish time)	Xetra Batch Day (Irish time)	Weekend available
ISE Xetra	0:00 / 09:00 – 24:00	00:00 / 09:00 – 15:00	Yes

Table 3: Operating times

4   Member Activities

4.1   SIMULATION PREPARATION

Member firms and ISE Xetra Service Providers are encouraged to use the preparation period to ensure successful participation in Xetra Release 17.0 simulation. All members are recommended to use this time to adapt all exchange applications based on these interfaces (VALUES API, Enhanced Broadcast Solution, Enhanced Transaction Solution, Xetra FIX Gateway, Xetra Market Data) according to the revised specifications.

The Xetra Release 17.0 front end software including installation notes for simulation will be delivered on Friday evening **September 8th 2017** to the respective member report node MISS. In case of a failed or uncompleted receipt of the front end software, the delivery will be repeated in the evenings of **September 11th** and **September 12th 2017**. In addition, members are free to download the new front end software from the following path of the Xetra website www.xetra.com:

Member Section > Cash Market Member Section >

Cash Market Resources > Software > Xetra 17.0 > Simulation

Alternatively, members can request a retransmission to their MISSes from Xetra Customer Technical Support (see chapter 5.1 for contact details). The installation of the front end member software should be performed after receipt.

Login to the ISE Xetra simulation environment will be possible from **September 11th 2017** onwards.

In order to participate in simulation, specific tasks have been identified and are provided in the checklist for simulation provided together with this document.

In addition, the following activities should be completed by member firms for participation in the member release simulation:

- Identification of resources for timely installation of Xetra Release 17.0 front end software

- User IDs and passwords are available (otherwise contact Clearing Data Control; for contact details see chapter 5.1)

- Self-developed or third party software is ready, if its usage is intended

- Related in-house and back office systems are set up to simulate subsequent processing

- Identification and confirmation of resources for participation in simulation on the days specified in the simulation calendar

- Member firm specific simulation objectives and scenarios - if desired - are defined and synchronised with the simulation scenarios provided herein

- Member firm internal issue management process and organisation is established

- Required broadcast streams are subscribed to

- Confirmation that all required reports are selected

- Application Identifier for Enhanced Transaction Solution connections are already ordered and approved by DBAG and ISE. If an additional Application Identifier is required, a respective application form is available under:

- Additional ETS Session IDs: If further Session IDs (max. 8) are necessary, a request can be addressed to ISE Traded Markets Infrastructure (for contact details see chapter 5.1)

- Multicast addresses and affected parts for Enhanced Broadcast Solution interfaces are configured in member firms' in-house firewalls for receiving according broadcast streams

- If required, Multi Interface Channel for using MDI has been requested (only for members without Enhanced Broadcast Solution) and configured with the multicast addresses

- Trading and back office sessions for FIX Gateway have been ordered and established, if required

- Subscribe and establish access to Common Report Engine

In case a member firm encounters any issue which risks adherence to the schedule, we strongly recommend that immediate contact to ISE Traded Markets Infrastructure (for contact details see chapter 5.1) is made to prevent issue escalation.

For any technical installation questions please contact Xetra Customer Technical Support (for contact details see chapter 5.1).

4.2   SIMULATION EXECUTION

Simulation is the final opportunity to attain functional and technical readiness for the new Xetra Release 17.0 software.

Member firms are free to choose their own focus for the simulation period. They are encouraged to simulate the processes necessary for their business.

The simulation participants can define and process their own simulation scenarios. Member firms can generally participate in the simulation at any time, if the technical connection and login tests were executed successfully.

Focus days (chapter 6.2.2) are provided to enable firms to re-test their procedures for handling market reset and market reallocation events.

Each member firm is also encouraged to check and adjust (if necessary) the selection of reports that it wishes to receive in the Report Selection window available in Xetra. For details about the offered reports, please refer to chapter 7.1.

As the total number of trades is restricted due to limited resources of the simulation environment, member firms are asked to limit the number of trades employed in testing. ISE and DBAG reserve the right to delete orders / trades in case the limitation is exceeded.

If more trades are required to support testing, please contact ISE Traded Markets Infrastructure for support (contact details see chapter 5.1).

5   Simulation Support

5.1   HELPDESKS

Dedicated support to the members is facilitated by the ISE and by DBAG helpdesks.

Xetra Functional Helpdesk

Tel. +49 (69) 211 - 1 14 00   Monday – Friday: 7.00 – 17.00 (Irish time)

Fax +49 (69) 211 - 1 14 01

E-mail: xetrahelpdesk@deutsche-boerse.com

Clearing Data Control

Tel. +49 (69) 211 - 1 24 53   Monday – Friday: 7.00 – 19.00 (Irish time)

Fax +49 (69) 211 - 1 44 20

E-mail: clearingdata@deutsche-boerse.com

Xetra Customer Technical Support

Please use your individual VIP #   Monday – Friday: 7.00 – 17.00 (Irish time)

E-mail: CTS@deutsche-boerse.com

ISE Traded Markets Infrastructure

Tel: +353 1 6174 200   Monday – Friday: 9.00 – 17.30 (Irish time)

E-mail: isexetra@ise.ie

5.2   POINTS OF INTEREST

A list of items which are important prior to the simulation start of Xetra Release 17.0 will be published on September 8th, 2017. These "Points of Interest" list will be available on the Xetra website www.xetra.com under the path:

Member Section > Cash Market Member Section >

Cash Market Resources > Documentation > Xetra 17.0 > Functional

ISE member firms should note that some of these may not be relevant to ISE Xetra but only for other Xetra markets.

6   ISE Xetra Simulation

The following information is dedicated to the simulation activities for the ISE Xetra environment.

6.1   SIMULATION MEMBER DATA SETUP

For Xetra Release 17.0 simulation setup, the following data will be taken over from Xetra Release 16.0 permanent simulation setup:

- Technical member firm data (i.e. system IP address, node name, node password, network password, primary and backup access point, hardware type, report nodes, application identifier, etc.)

- Functional member firm and user data (i.e. member name, member address, KV number, member type, settlement account, user IDs and passwords etc.)

- Xetra simulation user IDs and passwords. Please note that additional simulation users may be set up by a member firm's security administrator, following a similar generic scheme like in production: e.g. "ABCFRSIM123" and simulation user/trader individual password

6.2   FOCUS DAYS

6.2.1   Simulation instruments

Instrument specific master data will be taken over from the current data base setup of the permanent simulation environment. Please note that the instrument scope available in ISE Xetra simulation is reduced compared to ISE Xetra production.

The instruments available in ISE Xetra for testing in simulation are contained in the following instrument groups:

- ISE1 and ISN1: shares, ETFs and foreign currency instruments

- ISEB and ISED: debt securities

6.2.2   Focus days

Focus days are explicitly marked in the simulation calendar. The following scenario (as marked in the simulation calendar) will be supported for ISE Xetra member firms:

Focus Day 1: FIX Gateway Failover Test

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 Xetra FIX Gateway requires all missed application messages for the purpose of reconciliation with the Xetra trading system.

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

7 Appendix

7.1 XML AND TEXT REPORTS

All reports provided by Xetra Release 17.0 for members, together with their frequency of creation, and whether they are available as text reports can be found in the document "XML Report Reference Manual". The document can be found on the ISE website (www.ise.ie) under the following path:

Trading Members > Equity Trading > Trading system > Xetra Sign In > Xetra Release 17

Please note that reports are only provided on Batch days and that some reports are not relevant to ISE member firms (e.g. Xetra BEST reports) although they may be available for selection.