

# ISE Xetra Release 16.0

**Permanent Simulation Guide for ISE Xetra Members of the  
Irish Stock Exchange**

Release Date: 22 December 2015

## Abstract

This document provides information to enable member firms' ongoing participation in the ISE Xetra Release 16.0 permanent simulation environment.

Release 16.0 was implemented on Monday, 30 November 2015.

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# 1 Introduction

This document provides an overview of the ISE Xetra permanent simulation environment for Release 16.0. Details of specific supported member firm testing are provided.

The structure of the document is as follows:

## **Chapter 1 – Introduction**

An overview of the content of the document is given.

## **Chapter 2 – Simulation Approach**

General information about the simulation environment, participating systems and the calendar is provided.

## **Chapter 3 – Member Activities**

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

## **Chapter 4 – Simulation Support**

The contact numbers and availability times of the available helpdesks are given.

## **Chapter 5 – ISE Xetra Simulation**

Details of specific supported tests including market reset and market reallocation event days are given.

## **Chapter 6 – Appendices**

A list of available XML reports and further information on the operation of market reset and market reallocation messages is provided.

## Acronyms and Definitions

API	Application Programming Interface
CCP	Central Counterparty
CEF	DBAG's Real Time Data Feed
DBAG	Deutsche Börse Group, Deutsche Börse AG, Deutsche Börse Systems
ISE	Irish Stock Exchange
ISE Xetra	The electronic trading platform of the Irish Stock Exchange
PSE	Permanent Simulation Environment
VALUES	Virtual Access Link Using Exchange Services
Xetra	Cash Market Electronic Trading system of DBAG

## 2 Simulation Approach

Simulation is 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.

- The PSE is accessible for all members and vendors with a technical connection to the ISE Xetra system and has the current production software installed on it.
- The PSE consists of two back ends, one for ISE Xetra , Xetra Frankfurt (Xetra FFM) and other Xetra markets, and another one for Xetra Frankfurt 2 (Xetra FFM2).
- The interfaces Enhanced Transaction Solution, Enhanced Broadcast Solution, Xetra FIX Gateway and Xetra Market Data Interface can also be tested in the PSE.
- The PSE has a few functional and technical differences compared to ISE Xetra production:
  - The number of batches is limited to a maximum of three per week (dates of batch runs are shown in the simulation calendar)
  - Certain instruments are not available in simulation
  - Publishing of end of day compliance reports and calculation of delayed publication is not available in simulation
- Please note that dedicated performance tests or mass data entries are not allowed in simulation environment. ISE reserves the right to delete orders in case the limitation of orders/trades per member is exceeded.

A list of tradable instruments for ISE Xetra simulation is provided and updated after every batch run. It can be found on the DBAG Xetra website [www.xetra.com](http://www.xetra.com) under the following path:

[Member Section > Cash Market Member Section > Cash Market Resources > Simulation > Instruments](#)

Under the same path a content description of the file can be found ('Xetra Release 16.0 Reference Data File Guide').

### 2.1 PARTICIPATING SYSTEMS

The following table gives an overview on the systems participating in Xetra 16.0 simulation:

System	Short Description
ISE Xetra	Electronic cash market trading system.
CCP	Central Counterparty System (delivery management, cash management, report and data dissemination, Corporate Actions processing).  CCP will run on the CCP simulation environment.
CEF <sup>1</sup>	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.
Common Report	Service which allows the centralised provision of reports.

<sup>1</sup> The CEF system will not permanently participate in Xetra Simulation. The ISE will notify members in advance if any CEF participation is planned.

Table 1: Overview of the Xetra Release 16.0 simulation systems

## 2.2 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:

[Trading Members > Equity Trading](#)

During permanent simulation several systems are involved.

For this reason two different kinds of calendars are used by the related systems participating in simulation:

- **Simulation calendar:** The characteristic of this calendar is the differentiation between batch days and online days and the calculation of the business date. A business day in this calendar lasts from one online day up to the next batch day. All online days before a batch day have the same business date as the following batch day. The business date is only changed with the next batch day. This calendar is used by the Xetra systems.
- **Business calendar:** This calendar does not differentiate between batch and online days. All weekdays are business days and each has its own business date. A business day lasts only one day and is changed every weekday.

As a result of this, the business date in the participating systems can differ from each other.

### Special note on order validity date:

Members must check the order validity date before entering orders. If the simulation calendar has an online day on the desired order validity date, the business date of the simulation calendar has to be used for the order validity date. The following table gives an example of this:

Calendar date	02.11.15	03.11.15	04.11.15	05.11.15	06.11.15	07.11.15	08.11.15
Simulation Calendar	Online day	Batch day	Online day	Batch day	Online day	Online day	Online day
Business date ISE Xetra	03.11.15	03.11.15	05.11.15	05.11.15	11.11.15	11.11.15	11.11.15
Order validity date <sup>2</sup>	<b>Change to</b> 03.11.15	03.11.15	<b>Change to</b> 05.11.15	05.11.15	<b>Change to</b> 11.11.15	<b>Weekend</b>	<b>Weekend</b>

Table 2: Example of order dates

The business days in ISE Xetra simulation always correspond to the trading days providing an end-of-day batch processing. During permanent simulation, two or three batches per week are typically provided.

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, and other non-

<sup>2</sup> In case the order is valid for the same day only.

trading days, to give members the opportunity to test long-lasting and complex simulation scenarios outside of usual working hours.

On batch days, the simulation environment 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 14:45 (Irish time).

On occasion, in order to facilitate emergency testing for Xetra Market Supervision, the simulation environment will be closed to members (please refer to simulation calendar for exact dates).

### 2.2.1 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
Pre-Trading*	9:00 – 9:15
Opening Auction*	9:15 – 9:30
Main-Trading	9:30 – 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 3: Timetable

\* Where the day before is also a batch day. Otherwise the pre-trading occurs on the previous calendar day.

### 2.2.2 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 4: Operating times



## **3 Member Activities**

### **3.1 SIMULATION PREPARATION**

The ISE Xetra permanent simulation front end software including installation notes was delivered to the respective member firm report node MISSEs. In case of a missing receipt of the front end software, members can download the current front end software from the following path of the Deutsche Börse Xetra website:

www.xetra.com > Member Section > Cash Market Members Section > Cash Market Resources > Software > Xetra 16.0 > Simulation

Alternatively, members can request a retransmission to their MISSEs from the Customer Technical Support.

For any technical installation questions please contact the Customer Technical Support team.

### **3.2 SIMULATION EXECUTION**

Member firms are free to choose their own simulation test scenarios. The ISE encourages firms to simulate the processes necessary for their firm's business, to acquire the knowledge and competence in working with the new and existing functional requirements.

Focus days (chapter 5) for certain features are provided to support member firms with their testing.

As the total number of orders/trades is restricted due to limited resources of the simulation environment, member firms are asked to limit the number of orders employed in testing and to use low volume orders.

If more trades are required to support testing, please contact ISE Traded Markets Infrastructure for support (contact details see chapter 4).

## 4 Simulation Support

Dedicated support to the members is facilitated by the ISE and by Deutsche Börse 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](mailto:xetrahelpdesk@deutsche-boerse.com)

### Xetra Customer Technical Support

Please use your individual VIP Number

Monday – Friday: 7.00 – 17.00 (Irish time)

Fax +49 (69) 211 – 1 84 01

E-mail: [CTS@deutsche-boerse.com](mailto:CTS@deutsche-boerse.com)

### ISE Traded Markets Infrastructure

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

Fax: +353 1 6795 432

E-mail: [isexetra@ise.ie](mailto:isexetra@ise.ie)

## 5 ISE Xetra Simulation

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

### 5.1 SIMULATION INSTRUMENTS

Please note that certain instruments are not available in ISE Xetra simulation.

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

ISE1 – ETFs and CCP eligible equities that are available in instrument group ISE1 in ISE Xetra production. Also some non-euro trading currency test instruments.

ISN1 – other equity instruments including some non-euro trading currency test instruments.

ISED and ISEB – A number of debt securities, which are admitted to the ISE's GEM market.

### 5.2 SUPPORT BY THE ISE

The ISE is available to support member firms with their testing by submitting or matching orders. If you require such assistance from the ISE, please contact the Traded Markets Infrastructure department (see chapter 4 for contact details).

### 5.3 SUPPORT BY DBAG

DBAG will also support member firm testing with specific focus days which are explicitly marked in the simulation calendar. The following scenarios will be supported for ISE Xetra member firms:

#### 5.3.1 Market Reallocation

If in very rare cases a technical interruption occurs on the ISE Xetra back end, a Market Reallocation Event message will indicate that all non-persistent orders or quotes stored in the order book of a specific set of instruments have been automatically deleted, and that the preliminary execution status of the non-persistent orders or quotes entered most recently may differ from the final execution status.

For permanent simulation the following scenario will be supported (for dates please refer to the simulation calendar or contact the Customer Technical Support):

The matching engine which processes the instrument IE0030606259 (BIR) will be suspended, stopped and restarted twice at 13:30 and 14:00 (Irish time).

Please note that the matching engine suspension period will last only a few seconds.

The order entry period, i.e. the time interval between two consecutive matching engine suspensions, is scheduled to last about 30 minutes. Market Supervision will inform about the exact start time of the order entry period and the matching engine suspension period via the Newsboard Message Window in the simulation environment.

Members intending to participate are requested to put in non-persistent buy orders in the above mentioned instruments during the order entry period.

Members are requested to avoid order executions. Instead, DBAG will ensure that an order execution will take place within the short timeframe of the matching engine suspension period by entering appropriate sell orders.

For more details on how Market Reallocation Events can be identified and the recommended course of action please refer to the appendix 'Market Reallocation Event'.

### 5.3.2 Market Reset

If a technical interruption occurs on the ISE Xetra back end, the Market Reset Event message will indicate that all non-persistent orders or quotes stored in the order book of a specific set of instruments have been automatically deleted.

In order to provide members with the opportunity to test their applications in case of technical problems on the exchange side, the following scenarios will be provided in the permanent simulation environment.

*Matching engine crash / failover:*

15:00<sup>3</sup> (Irish time)

First matching engine crashes in simulation, affecting instrument BIR.

15:30 (Irish time)

Second matching engine crashes in simulation, affecting instrument DOY.

After crash of the respective matching engine, another matching engine will take over (failover) the processing of all instruments served by the crashed one.

In this scenario non-persistent orders and quotes for the set of instruments involved will be removed from the ISE Xetra order book. A "Market Reset" event will be triggered, whereby only persistent orders are restored in the order book.

*Host crash / failover:*

16:00 (Irish time)

At 16:00 (Irish time) the simulation host will be shut down. The other host will take over.

In this scenario non-persistent orders and quotes for the set of instruments involved will be removed from the ISE Xetra order book. A 'Market Reset' event will be triggered, whereby only persistent orders are restored in the order book.

For more details on how Market Reset events can be identified and the recommended course of action following a Market Reset event, please refer to the appendix 'Market Reset'.

For exact dates please refer to the simulation calendar.

### 5.3.3 FIX Gateway Failover

FIX Gateway failover tests are performed in the permanent simulation environments of ISE Xetra on member request following the below described approach.

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

Customers should then activate the connection to the secondary 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 be made after a few seconds (30 seconds recommended).

Schedule:

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<sup>3</sup> Any variation to this time will be communicated to firms in advance.

- 10:00 CEST/CET: Application Failover FIX Gateway (i.e. IP address: 090.152.253.032 becomes unavailable)
- 10:20 CEST/CET: Restart of FIX Gateway (i.e. IP address: 090.152.253.032 available again)
- 11:00 CEST/CET: Application Failover FIX Gateway (i.e. IP address: 090.153.253.032 becomes unavailable)
- 11:20 CEST/CET: Restart of FIX Gateway (i.e. IP address: 090.153.253.032 available again)

All Members are enabled to logon to their initial Xetra FIX Gateway.

These tests are recommended for all Xetra participants (Members/Vendors) using the Xetra 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.

Please contact ISE Traded Markets Infrastructure in advance if you would like to join the test event.

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 fall-back.
- If a member 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.

## 6 Appendices

### 6.1 XML AND TEXT REPORTS

The table below shows a list of reports available with Xetra Release 16.0 to ISE Xetra members, together with their frequency of creation, and whether they are available as text reports. 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.

For more details on the reports please refer to the 'XML Report Reference Manual', available on the ISE website ([www.ise.ie](http://www.ise.ie)) under the following path:

[Trading Members > Equity Trading > Xetra sign-in](#)

Report ID	Release 16.0 Report Name	XML	Text-report	Frequency
RPTCB042	Fees Per Executed Order	x	x	d
RPTCB050	Fee Overall Summary	x	x	d
RPTCB060	Fee Statement	x	x	m
RPTCB062	Designated Sponsor Refund	x	x	m
RPTCB065	System Transaction Overview	x	x	d
RPTCB068	Transaction Overview	x	x	d
RPTMF001	MiFID OTC Trades EoD Compliance Report	x		d
RPTTA240	Cross Request Overview	x	x	d
RPTTC535	Daily BEST Quote Maintenance	x	x	d
RPTTC540	Daily Order Maintenance	x	x	d
RPTTC550	Open Order Detail	x	x	d
RPTTC810	Daily Trade Confirmation	x	x	d
RPTTC815	Daily MiFID Trade Reporting	x	x	d
RPTTC820	Daily Open OTC Maintenance	x	x	d
RPTTD930	Daily Trade Statistics	x	x	d
RPTTD965	Specialist State Change	x	x	d
RPTTL001	System Transaction Overview	x	x	d
RPTTL100	Order to Trade Ratio	x	x	d
RPTTT110	User System Security Maintenance	x	x	d
RPTTT115	User System Security Status	x	x	d
RPTTT120	User Instrument Maintenance	x	x	d
RPTTT125	User Instrument Status	x	x	d
RPTTT130	Daily Default BEST Executor Maintenance	x	x	d

## 6.2 MARKET REALLOCATION EVENT

If a technical interruption occurs on the ISE Xetra back end, the Market Reallocation Event message will indicate that all non-persistent orders and quotes stored in the order book of a specific set of instruments have been automatically deleted and that the preliminary execution status of the non-persistent orders and quotes entered most recently may differ from the final execution status.

The Market Reallocation Event message will provide information concerning:

- The time the market reallocation event occurred
- The time up to which all order response information is correct
- The deletion of non-persistent orders and quotes stored in the order book

A Market Reallocation Event message will be sent out to all member firms that have placed non-persistent orders or quotes in the order book of an instrument affected by the Market Reallocation Event by one or more of the following streams:

- The 'recoverable matching event' broadcast stream via VALUES
- The 'unreliable info notification' via the Enhanced Transaction Solution
- The 'recoverable event notification' via the Enhanced Transaction Solution

Since a Market Reallocation Event will occur exclusively at a set level, only one message will be sent out per set ID for each VALUES and Enhanced Transaction Solution (ETS) stream regardless of how many non-persistent orders or quotes a member may have had stored in the order book.

If a member firm has entered a non-persistent order or quote during the current business day, or still has a non-persistent order in the order book of a specific set, depending on the type of connection that was used to enter the order (VALUES, ETS) the following broadcasts are sent in the case of a market reallocation event:

### **Xetra FIX Gateway**

Clients will be informed by the Xetra FIX Gateway about the mass deletion of non-persistent orders triggered by a Xetra Market Reallocation in the following way:

At first the market reallocation event will be indicated by an initial User System Event (USE) message on set ID level (PartitionID (5948) = Set ID, Text (58) = "Start of market reallocation transmission", ReturnCode (5555) = 89105).

For every instrument where non-persistent orders of the respective FIX session have been deleted, a User System Event (USE) message (Text (58) = "Start of market reallocation transmission for instrument", ReturnCode (5555) = 89842) indicates the start of transmission for an affected instrument.

The FIX Gateway will then issue on instrument level a block of Execution Report (8) messages for every cancelled non-persistent order owned by the FIX session (ExecType (150) = 4 - Cancelled).

Please note: In case of a Market Reallocation event the Execution Reports (8) for cancelled non-persistent orders might show the value "-1" in CumQty (14) and "101

- Quantities in doubt" in ExecRestatementReason (378). This will indicate that the status of the order at time of the cancellation could not be determined by the Xetra FIX Gateway. In this case it is highly recommended to verify the execution status of the unreliable order response information of previously entered non-persistent orders.

The completeness of cancelled order messages on instrument level is communicated by a User System Event (USE) message (Text (58) = "End of market reallocation transmission for instrument", ReturnCode (5555) = 89854).

Finally the end of market reallocation transmission is indicated by a User System Event (USE) message on set ID level (PartitionID (5948) = Sd, Text (58) = "End of market reallocation transmission", ReturnCode (5555) = 89108).

## VALUES API

Within the "matching event" broadcast the following fields are used to report this event:

- Verification whether potentially affected orders or quotes exist
- *trnTypId* is filled with "D" – Deletion
- *mktRstInd* is filled with "R" - Deletion due to Market Reallocation; please check your trades
- *ordrCreTim* contains the time up to which all executions and modifications are confirmed.  
Members are recommended to check their trades
- *dateLstUpdDat* contains the time of the market reallocation including a market reset

## Enhanced Transaction Solution

Market Reallocation Events are communicated via Info Notification and Event Notification (Foreign Event: Mass Delete).

- Valid value for field ***TrnReasonCode***:

Value	Description
"MRA"	Market Reallocation
- Field *LastGuarTrnId* contains the timestamp of the last confirmed transactions.
- Field *LastGuarTrnTime* contains the date and time of the last confirmed transactions. The value is based on the *LastGuarTrnId* timestamp, but does not have the accuracy of this timestamp.
- *lastEventTrnId* contains the time of the market reallocation including a market reset.

## Enhanced Broadcast Solution

In the context of a Market Reallocation Event the Xetra Enhanced Broadcast Solution will inform members via a Technical Market Reset Message (template ID = 12) for each set ID affected.

The Delta and Snapshot stream may provide duplicate Trade Price Sequence Numbers.

The All Trade Price stream will only publish trade prices that in fact took place.

## Xetra Market Data Interface

In the context of a Market Reallocation Event the Xetra Market Data Interface will inform members via a Market Data Message (template ID = 43) for each set ID affected.

The All Trade Price Message within the Ticker Stream will only publish trade prices that in fact took place.



## Recommended Course of Action following a Market Reallocation Event

A member firm which has received a Market Reallocation Event message is highly recommended to verify the execution status of the preliminary order response information of their previously entered non-persistent orders or quotes, as follows:

- Verification whether potentially affected orders or quotes exist

If non-persistent orders or quotes have been entered before the Market Reallocation Event occurred, but after the time provided in the Market Reallocation Event message up to which all order response information is correct, then the execution status of these orders or quotes should be checked in more detail.

- Identification of affected orders or quotes

To check the execution status of potentially affected orders or quotes contained in the unreliable order response information, use one of the following solutions:

- An appropriate recoverable event notification via the Enhanced Transaction Solution
- An appropriate recoverable matching event broadcast via VALUES API
- An appropriate Trade Capture Report message received via a Back-Office session of the Xetra FIX Gateway

If the execution status of a non-persistent order or quote cannot be confirmed by a recoverable event notification or matching event broadcast, then the execution did not take place. Instead, the non-persistent order or quote was automatically deleted by the Market Reallocation Event without being executed.

- Impact on member applications

Member applications relying on the execution status of a non-persistent order or quote contained in the preliminary order response information must consider that the execution status is preliminary until confirmed by a corresponding recoverable event notification or matching event broadcast.

In the case of a Market Reset Event, the consistency of the order response information is not affected and no actions need to be taken.

## 6.3 MARKET RESET EVENT

If a technical interruption occurs on the ISE Xetra back end, the Market Reset Event message will indicate that all non-persistent orders or quotes stored in the order book of a specific set of instruments have been automatically deleted.

The Market Reset Event message will provide information concerning:

- The Set ID of the instruments that are involved
- The time the market reset event occurred

A Market Reset Event message will be sent out to all members who have placed non-persistent orders or quotes in the order book of an instrument affected by the Market Reset Event by one or more of the following streams:

- The 'recoverable matching event' broadcast stream via VALUES
- The 'unreliable info notification' via the Enhanced Transaction Solution

- The 'recoverable event notification' via the Enhanced Transaction Solution

Since a Market Reset Event will occur exclusively at a set level, only one message will be sent out per set ID for each VALUES and Enhanced Transaction Solution stream regardless of how many non-persistent orders or quotes a member has previously stored in the order book.

If a member has entered a non-persistent order during the current business day, or has a non-persistent order resting in the appropriate book of a specific set, depending on the type of interface used to send the orders the following broadcasts are sent in case of a market reset.

### Xetra FIX Gateway

Clients will be informed by the Xetra FIX Gateway about the mass deletion of non-persistent orders triggered by a Market Reset in the following way:

- At first the market reset event will be indicated by an initial User System Event (USE) message on set ID level (PartitionID (5948) = Set ID, Text (58) = "Start of market reset transmission", ReturnCode (5555) = 89107).
- For every instrument where non-persistent orders of the respective FIX session have been deleted, a User System Event (USE) message (Text (58) = "Start of market reset transmission for instrument", ReturnCode (5555) = 89852) indicates the start of transmission for an affected instrument.
- The FIX Gateway will then issue on instrument level a block of Execution Report (8) messages for every cancelled non-persistent order owned by the FIX session (ExecType (150) = 4 - Cancelled).
- The completeness of cancelled order messages on instrument level is communicated by a User System Event (USE) message (Text (58) = "End of market reset transmission for instrument", ReturnCode (5555) = 89854).
- Finally the end of market reset transmission is indicated by a User System Event (USE) message on set ID level (PartitionID (5948) = Sd, Text (58) = "End of market reset transmission", ReturnCode (5555) = 89108).

### Enhanced Transaction Solution

Market Reset Events are communicated via Info Notification and Event Notification (Foreign Event: Mass Delete).

The values for field **TrnReasonCode** are:

<u>Value</u>	<u>Description</u>
"FMR"	Functional Market Reset
"TMR"	Technical Market Reset

- *lastEventTrmId* contains the time of the market reset.

### VALUES API

Within the "matching event" broadcast the following fields are used to report this event:

- The trnTypId is filled with "D" – Deletion;
- The mktRstlnd is filled with "T" for the technical reset and "M" for the functional reset; and
- dateLstUpdDat contains the time of the market reset.

### **Enhanced Broadcast Solution**

In the context of a Market Reset Event the Xetra Enhanced Broadcast Solution will inform member firms via a Technical Market Reset Message (template ID = 12) for each set ID affected.

In case of a technical market reset the following information is provided by the EnBS:

- Market Reset Message (TID: 12) is sent in the State Change Stream
- The sequence number of an instrument restarts with 1
- A snapshot (full incremental) is provided in the Delta/Incremental stream
- No further synchronization with the snapshot stream is required
- In this case the order book must be emptied before processing this message

In case of a functional market reset (Instrument State HALT) the order book was closed and will be updated when switching to pre-trading. No special processing needs to be considered.

### **Xetra Market Data Interface**

In the context of a Market Reset Event the Xetra Market Data interface will inform members via a Market Reset Message (template ID = 43) for each set ID affected.

### **Recommended Course of Action following a Market Reset Event**

A Market Reset Event will describe the deletion of non-persistent orders and quotes stored in the order book of an affected set ID, but will have no impact on the execution status. That is, the preliminary execution status of the unreliable order response information is expected to be identical to the final execution status.