

T7 Release 6.0

Final Release Notes

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T7 Release 6.0	Eurex	Xetra	Combined	Q1 2017			Q2 2017			Q3 2017			Q4 2017		
				Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Simulation															
Participant Simulation Guide	X	X											●		
Overview and Functionality															
T7 Functional and Interface Overview			X										●		
T7 Cross System Traceability			X										●		
T7 Functional Reference			X										●		
Participant and User Maintenance Manual	X	X											●		
Market Model Xetra Continuous Auction		X											●		
Contract Notes Description		X											●		
GUI Solutions															
Trader, Admin and Clearer GUI - Manual	X	X											■	●	
T7 Trader, Admin and Clearer GUI - Installation Manual			X										■	●	
Trading Interfaces															
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										■	●	
Market and Reference Data Interfaces															
T7 Market-, Enhanced Order Book- and Reference Data Interfaces, Manual incl. Fast Message Template and Repository			X										■	●	
Reference Data File – FIXML Schema Files	X	X												●	
Xetra Instrument Reference Data Guide		X												●	
T7 Extended Market Data Services – Manual incl. Fast Message Template and Underlying Ticker Data			X										■	●	
Reports															
XML Reports - Reference Manual	X	X												■	●
Common Report Engine User Guide			X											●	
Network Access															
Network Access Guide			X											●	
Rules & Regulations															
Xetra Rules & Regulations		X												●	

The documents will be available on the Xetra website www.xetra.com > **Technology > T7 trading architecture > System documentation > Release 6.0**

Please note that the outlined schedule is preliminary and subject to change.

1.3 Contacts

If you have any questions or require further information, please contact your Global Key Account Manager Trading. Alternatively, please contact your Technical Key Account Manager using your VIP number or via e-mail to: cts@deutsche-boerse.com.

1.4 Definitions and Abbreviations

Term/ Abbreviation	Description
DBAG	Deutsche Börse AG
EMDI	T7 Enhanced Market Data Interface
EOBI	T7 Enhanced Order Book Interface
ESMA	European Securities and Markets Authority
ETI	T7 Enhanced Trading Interface
FIX	Financial Information eXchange (portal)
GUI	Graphical User Interface
HF	High-Frequency (gateway)
LF	Low-Frequency (gateway)
MDI	T7 Market Data Interface
MiFID II	Markets in Financial Instruments Directive
MiFIR	Markets in Financial Instruments Regulation
RDF	T7 Reference Data File
RDI	T7 Reference Data Interface
RfQ	Request for Quote

2. Functional Aspects

2.1 Enhancement to meet the MiFID II Regulatory Requirements

In order to satisfy the regulatory MiFID II/ MiFIR requirements, Deutsche Börse AG will introduce several enhancements with T7 Release 6.0.

2.1.1 Pre-Trade Controls

The MiFID II requirements for pre-trade controls for cash markets are:

- Price collar check, which prevents orders with a too large price difference to a reference price from entering the order book.
- Maximum order quantity validation, which prevents orders with a too large order size from entering the order book.
- Maximum order value validation, which prevents orders with too large order values from entering the order book.

The price collar check requirement is covered by the existing T7 price reasonability check functionality.

The maximum order value validation was introduced with T7 Release 5.0 and covers the MiFID II requirements for maximum order value validation.

Maximum Order Quantity Validation

Participants will be able to maintain the maximum order quantity limits for their users intraday and the changes will be effective immediately. The validation can be skipped for orders and quotes entered via ETI and FIX gateways if the user wishes this explicitly. Orders entered via the T7 GUI are always subject to the maximum order quantity check.

The total order quantity or the modified total order quantity will be validated against the maximum order quantity. Any previously matched partial execution will not be taken into account. If the order modification will lead to a maximum order quantity violation, then the modification request is rejected and the initial order remains in the order book.

Iceberg orders will be validated with the full order quantity when entering the order book, refills of Iceberg orders are not relevant for the validation. Volume Discovery Orders will be validated with the full order quantity.

Initially with release introduction, XETRA will set the maximum order quantity value limit to the maximum allowed value for all users.

Maximum Order Value Validation

The maximum order value is introduced with the current T7 Release 5.0 for the cash market and fulfils the MiFID II requirements for maximum order value validation. With T7 Release 6.0, it will be possible to skip the validation for orders and quotes entered via ETI or FIX gateways. Orders entered via the T7 GUI will always be validated against the maximum order value limits.

The maximum order value validation will be done on order entry. Stop orders will be validated based on their trigger price. One Cancels the Other orders will be validated based on their limit price. Iceberg orders will be validated with the full order quantity, refills of Iceberg orders are not relevant for the validation. Volume Discovery Orders will be validated with the full order quantity and for buy side orders with the Volume Discover Price (the second limit of the Volume Discovery Order). For sell side orders, the last trade price, or the respective reference price will be used. The validation will apply for BEST orders, but not for BEST quotes.

For products with currencies different from Euro, the exchange rate will be considered in the order value calculation.

Note that the functionality described above applies for quotes as well, if not explicitly stated otherwise.

2.1.2 Tick size regime

According to the tick size regime that will be introduced with MiFID II, ESMA will provide tick size tables to the trading venues. ESMA tick tables will be implemented as price step tables in T7. New MiFID compliant price step tables will apply as of 2 January 2018, one day before the implementation date of MiFID II. Note that existing orders will be deleted when changing the price step tables.

2.1.3 Post-trade Transparency Provision

The MiFID II post-trade transparency requirements for financial markets in the European Union affect equity, ETF, ETC and ETN products. With Release 6.0, T7 will be enhanced to flag **algorithmic trades** in these products in the market data using the new field Algorithmic Trade Indicator. A trade is marked as algorithmic if at least one executed order or quote in the match event is originating from an algorithm as indicated in the parameter for the execution decision within firm.

2.1.4 Market Making Handling

2.1.4.1 Overview

The MiFID II regulations regarding market making aim to introduce predictability to the apparent liquidity in the order book by establishing contractual obligations for investment firms pursuing market making strategies. In order to comply with these regulations, Xetra will provide market making schemes (market making requirements and incentives) for liquid instruments as defined by the regulator. These instruments are indicated in RDI and the T7 tradable instrument file on the XETRA website.

New regulatory relevant states of market conditions for market making such as **normal market conditions**, **stressed market conditions** and **exceptional circumstances** will be defined. Stressed market conditions will be declared per instrument, whereas exceptional circumstances will affect the whole market. The instrument will be in normal market conditions, when neither stressed nor exceptional market conditions apply. Investment firms (market makers), which pursue a market making strategy in an instrument, will be required to enter written market making agreements under the exchange's market making scheme. Market makers will be obliged to quote under normal market conditions and in stressed market conditions. There are no market making obligations during exceptional circumstances. Market makers will be obliged to flag quotes and orders that are submitted under a market making agreement with a **Liquidity Provision Indicator**.

Further information for investment firms pursuing a market-making strategy will be provided in a separate circular on the XETRA webpage.

2.1.4.2 Stressed Market Conditions

By regulatory specification, stressed market conditions are characterized by significant short-term changes in (i) price and (ii) volume. In the T7 implementation, stressed market conditions are set for an instrument when in the price determination after an extended volatility interrupt the traded volume is significantly above the average traded volume for this instrument. Where the entry of an extended volatility interrupt for an instrument indicates a significant short-term change in price (cf. i) and the above-average traded volume indicates a significant short-term change in volume (cf. ii).

Stressed market conditions will last a predefined time period (e.g. one hour), which will be prolonged for another predefined time period in case of ongoing stressed market conditions.

Stressed market conditions will be published in the market view of the T7 GUI and in a dedicated new attribute (*MarketCondition*) on the T7 market data interfaces.

The triggering of stressed market conditions will become effective on MiFID implementation date (3 January 2018) for those XETRA instruments which are marked as liquid by ESMA.

2.1.4.3 Exceptional Circumstances

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 in a market the majority of instruments are in a volatility interruption, or extended 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 on all instruments of a market.
- Disorderly trading conditions at the exchange – this state is declared when there is either a significant increase of processing times on T7, 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 on all instruments of a market.

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 (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 an instrument 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.

Exceptional circumstances will not be declared before MiFID implementation date, 3 January 2018.

2.1.4.4 Liquidity Provision Indicator

According to the regulatory requirements, market makers are obliged to flag orders and quotes entered under a market making agreement for liquidity provision (liquidity provision activity). As outlined in the related ESMA guidelines for MiFID II, the following scenarios of liquidity provision activities are defined:

- Participant performing algorithmic trading to pursue a market making strategy (*Trading Capacity* set to Market Making, Proprietary or Riskless Principal).
- Participant performing a liquidity provision activity (not denoted as a market making strategy), dealing on own account (*Trading Capacity* set to Market Making, Proprietary or Riskless Principal).
- Participant performing a liquidity provision activity executes orders on behalf of clients (*Trading Capacity* set to Agency).

T7 will introduce a **Liquidity Provision Indicator** to allow the flagging of orders and quotes used in a liquidity provision activity.

The user can maintain the Liquidity Provision Indicator on order or quote entry or modification.

2.1.4.5 Liquid Instrument Flag

T7 will indicate liquid instruments according to the definition of ESMA in a new instrument parameter in the reference data interfaces T7 RDI and RDF. Liquid instruments will be subject to market making obligation and will support the declaration of stressed market conditions.

2.1.5 Audit Trail Reporting

According to the MiFID II requirements for Audit Trail reporting, Deutsche Börse AG is obliged to store relevant data for all transactions resulting from an order or quote. This applies to all instruments which are traded on the T7 system for the Xetra cash markets. The data will be provided to the National Competent Authority (NCA) on

request and on short notice. The requested reports will be prepared internally by Deutsche Börse AG, containing the requested fields and according to the format specified by the regulator.

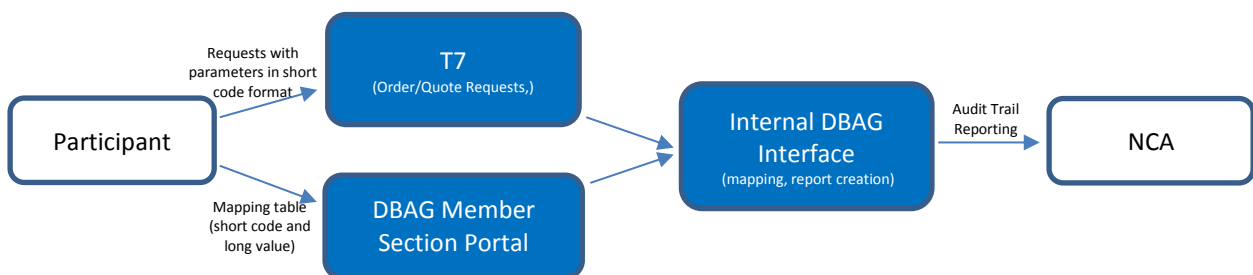
In order to comply with the regulatory reporting requirements, the following regulatory parameters for orders and quotes need to be provided by the participants with T7 release 6.0:

- Client Identification Code
- Investment Decision within Firm
- Execution Decision within Firm
- Liquidity Provision Indicator

These parameters are described in the following. As an exception, the liquidity provision indicator is described in chapter 2.1.4 about Market Making Handling.

New attributes on orders and quote maintenance requests will be introduced with T7 Release 6.0, which can be used by the participants to set the new regulatory parameters. The new attributes will be available and need to be filled by the participants for new orders and quotes with the introduction of T7 Release 6.0 on 4 December 2017. This applies irrespective that the implementation date of MiFID II is on 3 January 2018. For existing orders in the order book, the new attributes will be initially set by the exchange with release introduction (cf. chapter 2.1.6). Participants should check and, if necessary, update the values for the new attributes. From 3 January 2018 onwards, the information in the attributes must be in accordance to regulatory requirements.

There are several new parameters which will not be provided directly on order or quote maintenance, but need to be specified by so called **short codes**. The short codes are mapped to their final long values in the format required by the regulator (alphanumeric long values) according to a mapping table, which the participants need to provide to their central coordinator. The central coordinator will need to upload the mapping table before the implementation date of MiFID II in the Member Section on the Xetra website www.xetra.com. Deutsche Börse AG will map the short codes from the order or quote maintenance request to the information provided via participants' uploads and will create the Audit Trail Reporting for the regulator accordingly.



Client Identification Code

ESMA requires a Client Identification Code (alphanumeric value with up to 35 characters) in the Audit Trail Reporting with the following values:

- the Legal Entity Identifier (LEI), if the client is a legal entity,
- the National Identifier (NationalID), if the client is not a legal entity,
- AGGR, if the order is an aggregation of multiple client orders,
- PNAL, pending allocation.

This information, together with a corresponding short code, has to be part of the mapping table which has to be uploaded by the participants in the newly introduced upload portal in the Member Section.

In order to comply with this requirement, the parameter *ClientID* will be introduced in T7 as an optional 8-byte unsigned numeric value, which can be used for the entry of the before mentioned short code. For orders sent from an agent account (i.e. the parameter Trading Capacity is set to "Agent"), the *ClientID* is mandatory in the Order

Entry and Modification Request. If the *ClientID* is not provided for agent orders, then they will be rejected. For orders with other trading capacities and quotes, the *ClientID* field may remain empty.

Investment Decision within Firm

ESMA requires the reporting of the person or algorithm on participant's side responsible for the investment decision. The Investment Decision within Firm parameter (alphanumeric value with up to 35 characters) will provide either the National Identifier (NationalID) of the person responsible for the investment decision, or the algorithm identifier (AlgoID), to identify the algorithm responsible for the order/ quote entry or modification. Note that the person responsible for the investment decision may be different from the trader who enters the order or quote.

Two new optional parameters will be introduced with T7 Release 6.0 to support the required functionality:

- *Investment Decision Maker* – an 8-byte unsigned numeric value that will be the input for the long alphanumeric value for Investment Decision within Firm as required for the regulatory reporting. The parameter can be filled directly with the algorithmic identifier or in case the investment decision qualifier refers to a human with the short code of the person responsible for the investment decision, it may also remain empty as reference to the entering user.
- *Investment Decision Qualifier* – optional 1-byte parameter that indicates the origin of the investment decision: algorithm or human otherwise.

Execution Decision within Firm

ESMA also requires that the trading venue provides the identification of the person (Trader) or algorithm within its participants, who is responsible for the execution of the transaction. The Execution Decision within Firm parameter (alphanumeric value with up to 35 characters) will provide either the National Identifier (NationalID) of the person responsible for the execution decision, or the algorithm identifier (AlgoID), to identify the algorithm responsible for the transaction. Note that the person responsible for the execution decision may be different from the trader who enters the order or quote.

T7 will introduce two parameters to support this requirement:

- *Executing Trader* – an 8-byte unsigned numeric value that will be the input for the long alphanumeric value for Execution Decision within Firm as required for the regulatory reporting. The parameter can be filled directly with the algorithmic identifier or in case the execution decision qualifier refers to a human with the short code of the person responsible for the execution decision, it may also remain empty as reference to the entering user.
- *Executing Trader Qualifier* – a mandatory 1-byte parameter that indicates the origin of the execution decision: algorithm or human otherwise

Additional information about the required reference data from participants and the enhancement of order records is provided in 'Circular 060/17 - MiFID II/MiFIR: Member reference data and enhancement of order records' from 16 June 2017 on the Xetra webpage.

2.1.6 Conversion of Existing Orders in the Order Book

For release introduction, the new regulatory order attributes will be initially set by the exchange for existing non-expired book orders as follows:

- *ClientID*
The *ClientID* is not filled for all orders.
- *Liquidity Provision Indicator*
The *Liquidity Provision Indicator* is set to indicate no liquidity provision activity for all orders.
- *Executing Trader Qualifier*
The *Executing Trader Qualifier* is set to "24" for all orders, indicating that the decision was taken by a natural person.
- *Executing Trader*
The *Executing Trader* is not filled for all orders.

- *Investment Decision Qualifier*
The *Investment Decision Qualifier* is not filled for all orders.
- *Investment Decision Maker*
The *Investment Decision Maker* is not filled for all orders.

T7 will delete existing orders of all XETRA instruments on 29 December 2017 after close of trading. This applies to all instruments, irrespective whether price step tables will be changed (indicated by the deletion reason “change of tick rule”) or not (indicated by the deletion reason “product assignment change”).

2.1.7 Trading Venue Transaction Identifier Code (TVTIC)

ESMA requires that the trading venue assigns a code to transactions on the maintenance of data relating to orders and quotes. This code is denoted as **Trading Venue Transaction Identifier Code (TVTIC)**. The T7 TVTIC will be formed from the following T7 information:

- **Environment Indicator**
The environment indicator is set to 1, indicating the T7 environment.
- **Security ID**
The security ID corresponds to the instrument ID assigned by T7. The security ID is a 20-character string padded with leading zeros. The security ID can be determined from the corresponding ETI or FIX messages.
- **Transaction Timestamp**
The transaction timestamp refers to the time in the Unix epoch measured in nanoseconds. The transaction timestamp is a 20-character string, padded with leading zeros. The transaction timestamp can be determined from the corresponding ETI or FIX messages.
- **On/Off-book Indicator**
The on/off-book indicator is set fixed to 0 which indicates on-book transactions.

T7 will concatenate the components into a 42-character string as follows:

Environment Indicator	SecurityID																				Transaction Timestamp																				On/Off-book Indicator
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42

Position

2.2 Xetra BEST

The BEST functionality that T7 will offer with Release 6.0 will guarantee an execution price better than the price within the current order book by routing of customer orders from Flow Providers to specific other market participants acting as BEST Executors. The BEST functionality can be enabled for each instrument independently.

The Xetra BEST Execution functionality will enable business units, which do not provide a BEST Execution facility themselves, to route their order flow to a BEST Executor. Such business units are called Flow Providers. The BEST Executor will provide BEST Execution for the customers of these Flow Providers. One BEST Executor can serve several Flow Providers, but one Flow Provider can send his orders to only one designated BEST Executor.

In order to provide BEST Execution, the BEST Executor will enter a special quote type called BEST quote that is not shown in the public order book. BEST Executors will be able to decide whether or not to provide BEST quotes, i.e. there will be no obligation to provide BEST quotes.

A user will only be able to enter a BEST quote when he has the corresponding entitlement through having the role “Cash Market Maker”, and additionally has been allowed to use the new dedicated trading capacity for BEST Executor (Systematic Internaliser), which can be assigned in the user maintenance of the Admin GUI.

BEST quotes must have relative price limits that dynamically adjust according to the top of the order book. The BEST Executor will be able to provide one BEST quote per instrument. The BEST quote can have the following parameters independently for its bid and ask side:

- Relative Limit – the parameter ensures a moving BEST quote depending on the current best bid/ ask price, or the volume weighted average price for the size of the BEST order in the order book.
- Boundary – upper and lower boundaries for the bid and ask legs of the quote respectively. This parameter serves as a protection mechanism for the BEST Executor and prevents a BEST quote execution in case the potential execution price exceeds these limits.
- Size – the maximum executable quantity for one BEST Execution.
- Reserve Size – the parameter allows automatic refill of the quote quantity after an execution. The execution quantity is deducted from the reserve size. The value of the parameter *Reserve Size* should be smaller than the value of the parameter *Size*.

Only regular market and limit orders together with the Trading Capacity 'Agency' will be considered for BEST Execution (*BESTExecution* flag should be set to true in the Order Entry Request). Orders with a trading restriction will not be allowed for BEST Execution. No partial executions will be possible for BEST orders. If a BEST execution is not immediately possible, the order will be routed automatically into the order book. Only incoming orders will be subject to BEST Execution, i.e. the *BESTExecution* flag cannot be modified.

BEST trades will be possible, if the BEST order has a better price than the current best bid/ best ask limits in the order book, or if it has a better price for the quantity than the volume weighted average of the limit orders for this quantity in the order book. The BEST Execution price is feasible, if it is higher than or equal to the current best bid, or lower than or equal to the current best ask price in the order book.

2.3 Volume Discovery Service

The Volume Discovery Service in T7 Release 6.0 will offer access to "dark" and "lit" liquidity. This new service will combine the execution of an Iceberg order in the open order book with the execution of the hidden part of the Iceberg order at the midpoint against other orders of this type.

The hidden part of an Iceberg order may be executed against other orders of this kind at the current midpoint of the Xetra order book up to a second limit price (Volume Discovery Price) that is more aggressive than the visible limit price of the Iceberg order. Such an order is referred to as Volume Discovery Order. Volume Discovery Orders will behave just like Iceberg orders for matching in the visible order book and will be entered as Iceberg orders with the additional parameter Volume Discovery Price (*volDiscPrc*). The hidden volume (hidden quantity multiplied with execution mid point price) of a Volume Discovery Order has to be greater than or equal to the Volume Discovery Order Minimum Executable Volume (MEV).

Incoming Volume Discovery Orders will be executed first in the visible order book when this is possible. After all matching possibilities in the visible order book are exhausted, execution of Volume Discovery Orders at the midpoint between best bid and best ask will take place, according to the following preconditions and principles:

- It is possible to calculate a midpoint price from the visible order book.
- The hidden volume of Volume Discovery Orders is executable at the midpoint up to the specified Volume Discovery Price.
- The midpoint price is within the volatility ranges.
- Executions of hidden volume at the midpoint are at least for the specified Volume Discovery Order MEV per order.
- If several Volume Discovery Orders are available on the same side of the order book, the Volume Discovery Orders with hidden volume of at least MEV are matched according to price-time priority of the visible part.
- The visible peak of a Volume Discovery Order cannot be matched at the midpoint and remains unchanged.

With Release 6.0, T7 will be enhanced with a new time in force restriction Good Till Crossing/ Auction (GTX), which can be set only for Volume Discovery Orders. A Volume Discovery Order entered with the restriction GTX will be deleted at the start of an auction or in case of volatility interrupt. Volume Discovery Orders can be entered only during continuous trading.

Iceberg orders cannot be modified to Volume Discovery Orders, but it is allowed to modify a Volume Discovery Order to an Iceberg order.

2.4 Designated Sponsor Quote Request

With T7 Release 6.0, participants will have the possibility to decide who is to be informed about their Request for Quote (RfQ). The following options will be supported: i) all participants, ii) Designated Sponsors in the concerned instrument, iii) Market Makers and Designated Sponsors in the concerned instrument, iv) all participants and additionally the Designated Sponsors of the concerned instrument, v) all participants and additionally the Designated Sponsors and Market Makers of the concerned instrument. Additionally for each individual RfQ, participants will be able to decide whether their business unit ID is disclosed to receiving Market Makers and Designated Sponsors in the concerned instrument.

Initially, this feature will be supported for all instruments of trading venue XETR.

3. Technical Enhancements

3.1 Partition Specific Gateways

With T7 Release 6.0, Deutsche Börse AG will introduce partition specific gateways which will replace the currently existing high frequency (HF) gateways with them in a stepwise approach.

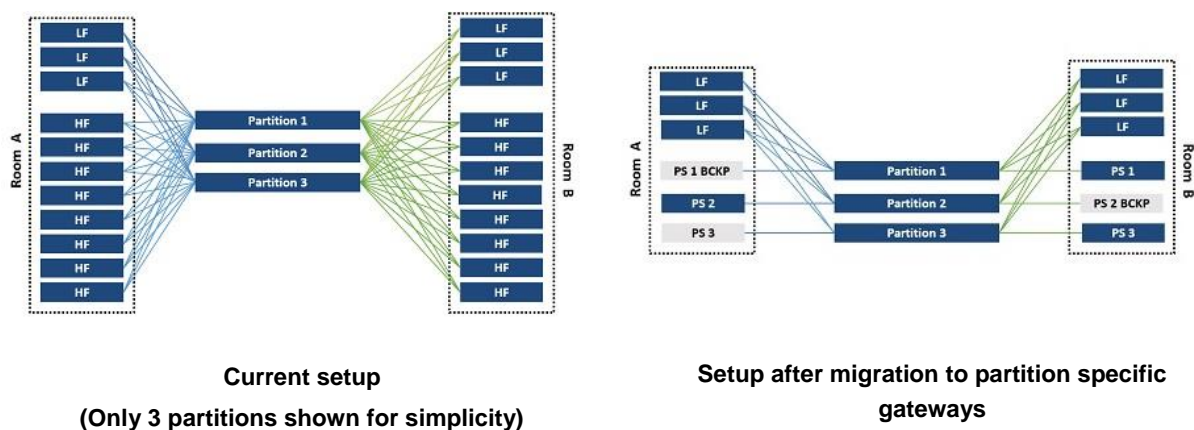
3.1.1 Introduction

Currently, the T7 trading system offers multiple paths into the matching engine via its 14 gateways (10 high frequency, 4 low frequency). In recent years, the development in technology has massively decreased processing times of exchanges and reaction times of Trading Participants. This leads to several issues with the multi-gateway architecture, such as:

- latency-variance between the Trading Participants' installations and the exchange matching engine,
- some participants using statistical advantages by sending equivalent requests multiple times. This leads to short-term system overload and longer delays in processing on exchange level.

With T7 Release 6.0, the above issues will be addressed by reducing the number of gateways to one fast gateway per Matching Engine (Partition) and by guaranteed ordering within these gateways. This will increase predictability, reduce multiplicity and mitigate the challenges for trading surveillance. HF gateways will be replaced by partition specific gateways step by step until end of March 2018. During this phase, some HF gateways will remain active. As a next step, routing to these partitions will be disabled on HF gateways. After partition specific gateways have been activated for all partitions, the HF gateways will be switched off. Thus, after the migration phase, the Xetra market will use a combination of LF and partition specific gateways.

Only HF sessions can successfully login to partition specific gateways or HF gateways as long as these (co)exist. Handling of LF sessions will remain unchanged. The ordering process of a session via the member portal will remain unchanged as well.



With T7 Release 6.0 it will be possible to enter lean GTC limit orders via HF sessions that will survive the trading day depending on the order validity.

3.1.2 Session Scope and Login Handling

A session may only login to one gateway, i.e. there will be a one-to-one mapping of session ID to TCP Connection at any given point in time.

For each active partition specific gateway, there will be a standby partition specific gateway for failover purposes. The standby gateway will accept TCP connections and session login requests in order to allow network setup checks. Partition specific gateways will accept no other requests in standby mode. The initial list of partition

specific gateways will be published in the 'Network Access Guide', which is part of the T7 System Documentation. Intra-release changes will be announced via the 'Implementation News'.

Parallel operation of partition specific and HF gateways will be possible during the migration phase. HF gateways will continue to route transactions to some partitions during this period.

A new limit on the maximum number of sessions per business unit that can login to a single partition specific gateway at any given point in time will be introduced. This limit will be published in the system documentation.

3.1.3 Failover and Session Handling

Upon a failure of a partition specific gateway, the standby partition specific gateway will take over. As with current gateways, sessions that were logged in on a failed gateway will be logged out and all quotes and non-persistent orders will be deleted.

To allow orderly and fair order management, there will be a predefined period in which order management is suspended via the partition specific gateway on affected partitions after a partition specific gateway fails over. A new service for the Service Availability stream is introduced in ETI to communicate the state of a partition specific gateway. Deutsche Börse AG will provide participants the possibility to test failover of partition specific gateways in a dedicated Focus Day in the T7 simulation environment.

The session login process after failover follows the existing logic described in Section 'Connectivity and Session Parameters' of the T7 Enhanced Trading Interface Manual. Upon a failure of a partition specific gateway (or the loss of connectivity), the session needs to reinitiate connection by sending a connection requests to the connection gateway. The details of partition specific gateway failover will be described in the "Incident Handling Guide" for T7.

As there will be a single active partition specific gateway for each given partition, in case of a loss of network connectivity on this network side, members using only one connection line will be able to reach the gateways in room A via B network with a certain delay.

3.2 Individual Marketplace Calendars

There are four international marketplaces set up on the T7 trading system currently:

- Eurex/ EXX Derivatives¹
- Xetra Cash
- Vienna Cash
- Dublin Cash.

This leads to high flexibility requirements towards the system. For example, Dublin cash plans to be open for trading on 1 May 2018, while at the same time, other marketplaces will be closed due to a public holiday. In order to minimize the operations efforts on customers' side, Deutsche Börse AG will enhance the trading calendar logic in T7 by introducing individual marketplace trading calendars with Release 6.0. Based on these calendars, the architecture components of T7 supporting marketplaces that are closed will remain down, or their activities will be suppressed. Thus, T7 will not distribute any data (e.g. broadcasts, reference data, reports) for these marketplaces. Participants and Operations departments of exchanges that are closed on a certain day will not be affected by the fact that other exchanges are open for trading on the same day.

3.3 T7 Enhanced Trading Interface and FIX Interface

With T7 Release 6.0, the T7 Enhanced Trading Interface (ETI) will move to version "6.0". Release "6.0" is a mandatory release. ETI version "5.0" will no longer be supported, i.e. T7 ETI will not be backwards compatible to the ETI version for Release 5.0.

¹ The Eurex market and the EEX market are set up on one marketplace called „Eurex/ EEX Derivatives“.

Detailed information about the ETI changes and enhancements for T7 Release 6.0 will be provided in the Trading Interfaces documentation on the Xetra webpage.

The T7 FIX interface will not be backwards compatible to the FIX interface for Release 5.0.

The referenced attribute names (*written in italics*) refer to the ETI interface.

3.3.1 Enhancements regarding the MiFID II Regulatory Requirements

The following enhancements in the ETI messages will be introduced in order to support the MiFID II regulatory requirements:

- For pre-trade Controls – there will be new flags (*ValueCheckTypeValue*, *ValueCheckTypeQuantity*) to allow the skipping of the Maximum Order Value validation, respectively Maximum Order Quantity validation, in the following messages:
 - New Order Single (short and regular layout)
 - Replace Order Single (short and regular layout)
 - Mass Quote
- For Market Making Handling – T7 will publish exceptional circumstances and stressed market conditions via ETI news messages.
- For Market Making Handling – the Liquidity Provision Indicator (*OrderAttributeLiquidityProvision*) will be introduced in the following messages:
 - New Order Single (short and regular layout)
 - Replace Order Single (short and regular layout)
 - Mass Quote
- For Audit Trail Reporting – T7 will introduce new fields for the input of the investment decision within firm and execution decision within firm (*PartyIdInvestmentDecisionMaker*, *PartyIdInvestmentDecisionMakerQualifier*, *ExecutingTrader*, *ExecutingTraderQualifier*) in the following messages:
 - New Order Single (short and regular layout)
 - Replace Order Single (short and regular layout)
 - Order Mass Cancellation
 - Mass Quote
 - Quote Mass Cancellation
 - Quote Activation
- For Audit Trail Reporting – T7 will introduce a field for client order identification (*PartyIdClientID*) in the following messages:
 - New Order Single (short and regular layout)
 - Replace Order Single (short and regular layout)
- T7 will introduce a new trading capacity for riskless principal order flow when a participant is acting on his own for a foreign account, covering transactions on the basis of matched principal trading. Riskless principal is defined as a trade in which a member who has received a customer order immediately executes an identical order in the marketplace, while taking on the role of principal, in order to fill the customer order. On clearing and billing level, the riskless principle flow and the respective proprietary flow will be consolidated within the P-account.

Note that the new attributes for audit trail reporting will not be included in response messages or notifications.

The FIX interface will be enhanced correspondingly, provided it supports the referenced requests.

3.3.2 Enhancements regarding Xetra BEST

For Xetra BEST, the following enhancements will be made in ETI:

- A new *BESTExecIndicator* is introduced in the New Order Single message.

- The following new BEST Quote messages are introduced: BEST Quote Request, BEST Quote Response and BEST Quote Execution Notification.
- Messages for Trade Notifications, Book Order Execution, Immediate Execution Response and Extended Order Information are enhanced with information about the *MatchType*, indicating a match with BEST execution (systematic internaliser).

3.3.3 Enhancements regarding Volume Discovery Service

The new field *discretionOffsetValue* for the Volume Discovery Price will be introduced in the Order Entry and Modify Messages, as well as in the Extended Deletion report and the Order Execution Report broadcast. The new Time in Force “GTX” and order expiration reason “148” in the *execRestatementReason* field will be included in the relevant messages as well.

3.3.4 Enhancements regarding Designated Sponsor Request for Quote

With T7 Release 6.0, the RfQ request message in T7 ETI will be enhanced with the receiver scope of the RfQ. Thus the entering user will have the possibility to define the receivers of the RfQ. A new type of messages Request for Quote Notifications is introduced in order to support private messages about RfQs which are directed to Designated Sponsors or Market Makers. Additionally, a new field *BusinessUnitID* will be added to the RfQ request, allowing the entering user to specify his or hers business unit ID, in order to disclose it.

3.3.5 Support of non-persistent GTC order via both, HF and LF sessions

Non-persistent GTC orders will survive the current trading day. On the next day, these non-persistent GTC orders will become part of the T7 order book (and get restated) independent from the availability of the owning session.

This leads to a changed system behaviour for HF sessions. At the T7 system start an order book restatement will take place caused by support of non-persistent GTC orders. There will be Extended Order Information messages for each restated order and end of the restatement messages per product (even for HF sessions not submitting/owning GTC orders).

3.3.6 Suppression of Order Confirmations for updated Visibility of Iceberg Orders in Auctions

With T7 Release 6.0, T7 will no longer send order confirmation messages for iceberg orders that reflect only the difference in the visibility of iceberg orders during auction phases. In T7 Release 5.0, such order confirmation messages had been sent at the start and at the end of an auction.

3.4 Market Data and Reference Data Interface Changes

Detailed information on the enhancements and changes to be introduced in the T7 Market and Reference Data Interfaces with Release 6.0 will be provided in the respective interfaces documentation on the Xetra webpage.

Note that the T7 market and reference data interfaces provide no backward compatibility between releases.

3.4.1 Enhancements regarding the MiFID II Regulatory Requirements

Market Making Handling – T7 will introduce the parameter *MarketCondition* to indicate stressed market conditions via MDI, EMDI and EOBI. The following messages will be enhanced with *MarketCondition*:

- Product State Change (applies to: MDI, EMDI, EOBI)
- Instrument State Change (applies to: MDI, EMDI, EOBI)
- Depth Snapshot (applies to: MDI, EMDI)
- Mass Instrument State Change (applies to: MDI, EMDI)
- Product Summary (applies to: EOBI)
- Instrument Summary (applies to: EOBI)

The following new dedicated instrument attribute type will be introduced in the Instrument Snapshot message of T7 RDI and RDF: Flag to indicate the liquid instruments as defined by ESMA (*InstrAttribType* Value: 114)

Post-trade transparency provision – a new flag *AlgorithmicTradeIndicator* will be introduced in T7 EMDI (Depth Incremental Message) and T7 EOBI (Messages: Trade Report, Partial Order Execution, Full Order Execution) to indicate an algorithmic trade.

3.4.2 Enhancements regarding Xetra BEST

Trades resulting from BEST Execution will be flagged accordingly in the EMDI and MDI messages. BEST trades affect the Trade Volume Report. The accumulated on-exchange Trade Volume per instrument will be completed with the BEST Trade Volume published as separate information (last BEST price/ quantity/ time, total BEST volume as well as number of trades).

3.4.3 Enhancements regarding Volume Discovery Service

Trades resulting from Volume Discovery Order midpoint execution will be reported in the Trade Report message with a new Match Type “VDO Midpoint”. The T7 EMDI and MDI messages will be enhanced to provide information for trades resulting from Volume Discovery Order execution at midpoint.

The accumulated on-exchange Trade Volume per instrument will be completed with the Volume Discovery Order Trade Volume published as separate information (last Volume Discovery Order price/ quantity/ time, total BEST volume as well as number of trades).

3.4.4 Enhancements regarding Designated Sponsor Quote Request

T7 MDI will publish RfQ data, depending on the defined scope of the RfQ.

4. T7 Trade and Admin GUI Enhancements

4.1 Enhancements regarding the MiFID II Regulatory Requirements

The Xetra Trader and Admin GUI will be enhanced to support the MiFID II regulatory requirements:

- Participants Admin users will have the possibility to set the Maximum Order Value and Maximum Order Quantity per user in the T7 Admin GUI, the changes are effective immediately.
- The entry of the *ClientID*, *Investment Decision Qualifier* and *Investment Decision Maker* will be supported in the Order Entry and Modification panels.
- The *Executing Trader Qualifier* and *Executing Trader* will be automatically set by the T7 GUI for order entry and modification, indicating that the execution decision was taken by a natural person corresponding to the entering user.
- The Liquidity Provision Indicator will be provided in the Order Entry and Modification GUI panels, in the Order View and Order History View.
- The status of stressed market conditions will be shown in the Market view, indicating when an instrument is in stressed market conditions or in Fast Market.
- The User Maintenance view will support to assign the trading capacity for Riskless Principal.

4.2 Enhancements regarding Xetra Best

The Xetra Trader and Admin GUI will be enhanced to support the BEST functionality:

- The Order Entry panel will be enhanced with the flag *BEST* to enter BEST Orders.
- The *OrdType* field will be set to *BEST* in the Orders and Order History views to indicate BEST Orders.
- BEST trades will also be displayed in the Trades view with a specific trade type.
- BEST trades will be displayed in the Product and Instrument Statistics view.
- The User Maintenance view will support to assign the trading capacity for BEST executer.

4.3 Enhancements regarding Volume Discovery Order

The T7 Trader and Admin GUI will be enhanced to support the Volume Discovery Order functionality:

- The Order Entry panel will be enhanced with the flag *VDOLimit* to enter the Volume Discovery Price.
- The Orders and Order History views will be enhanced with the field *VDOLimit*.
- A Volume Discovery midpoint trade will also be displayed in the Trades view with a specific trade type.
- Volume Discovery midpoint trades will be displayed in the Product and Instrument Statistics view.

5. Reports

The following new reports will be introduced with T7 6.0:

- TR101 – MiFID II OTR Report - this report provides each member with his daily values of OTRno and OTRvol per ISIN
- TR160 – Identifier Mapping Error – this is a daily mapping status report per business unit. Whenever for any T7 order, the mapping of short codes to long values for *ClientID* returns an error, “missing”, “not unique”, “PNAL” or “AGGR”, the respective data will be included in this error report for verification and correction by the Participant.
- TR161 – Identifier Mapping Status – this is a daily mapping status report per business unit. The defined valid mappings of short codes to long values will be stored for the regulatory Audit Trail Reporting.
- TR162 – Algo HFT Error – this is a daily report per business unit. Whenever the used AlgoID for any given order is not contained at the EoD in the certificate storage for the respective member, the AlgoID data will be included in the error report for verification and correction by the participant.
- TR163 – Algo HFT Status – this is a daily report per business unit. The report contains the algo certificates that have been stored, incl.valid from date.
- TR901 - MiFID II Message Rate Report - this report contains the message rates under Directive 2014/65/EU Article 40(c).

There will be changes in the following existing reports:

- TC540 – Daily Order Maintenance:
 - several new tags are added to the report: *Client Identifier, Investment Identifier, Investment Qualifier, Execution Qualifier, Execution Identifier, LiquidityProvActivity, RegOrderEvent*
 - The trading capacity for BEST orders and the second limit price and time in force GTX for Volume Discovery Orders and BEST Orders will be reflected in the report as well.
- TC550 – Open Order Detail:
 - several new tags are added to the report: *Client Identifier, Investment Identifier, Investment Qualifier, Execution Qualifier, Execution Identifier, LiquidityProvActivity.*
 - Volume Discovery Orders and BEST Orders will be reflected in the report as well.
- TC810 – Daily Trade Confirmation:
 - the tag *Cust* and *setTypCod* are removed from the report.
 - BEST trades and Volume Discovery midpoint trades will be reflected in the report as well.
 - Improved sorting criteria.
- TD930 – Daily Trade Statistics – Best trades and Volume Discovery midpoint trades will be reflected in the report.
- The Fee reports CB042, CB052, CB060, CB062, CB068, CB080 the member is represented by Participant and Business Unit.
- RD110 - User Profile Maintenance – derivatives specific attributes *TES Type* and *TES Eligibility* have been moved to a separate group.
- RD115 - User Profile Status – report is enhanced with two new capacity types for BEST and Risk Less Principal as well as with Maximum Order Quantity.

Details regarding these reports, as well as all other reports based on trading data from T7 will be published in the “T7 Trading Reports Reference Manual” that will be available on the Xetra webpage.

Note that there will be changes in the structure of the T7 reports manual in comparison to previous releases. The T7 reports documentation will contain cash and derivatives reports based on trading data only and exclude reports based on clearing data. For example, the Fee reports for Xetra will be included in the “T7 Trading Reports Reference Manual”, however the Fee reports for Eurex will not be part of the T7 report manual.

T7 Release 6.0

Xetra

Final Release Notes

V1.2

6. Change log

No	Chapter, page	Date	Change
V1.0	General	02-10-2017	Initial Version
V1.1	2.1.4, 2.4, 3.1, 3.2	13-10-2017	Integrated Review Comments
V1.2	3.3.4	07-11-2017	Reflect availability of RFQScope