T7 Release 12.0

Preliminary Release Notes

for the Trading Venues Xetra and Börse Frankfurt

Version   1

Date   29 June 2023

Content

1.   Overview of T7 Release 12.0

Deutsche Börse AG is planning to launch T7 Release 12.0 on 20 November 2023.

The following diagram gives an overview of the introduction schedule:
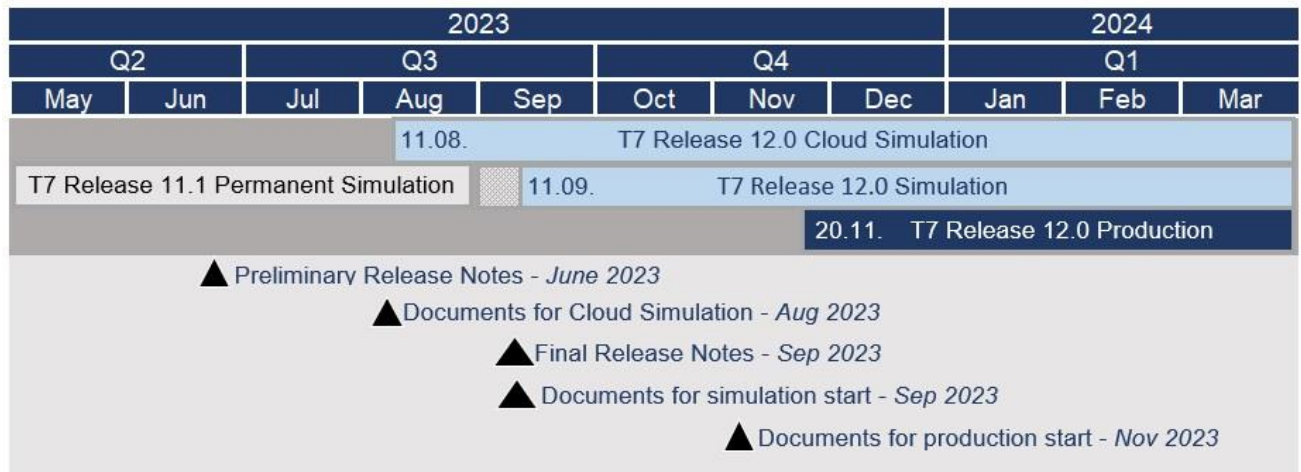
Deutsche Börse AG provides a dedicated release simulation environment to give trading participants the opportunity to perform comprehensive testing of their trading applications independent from the T7 production environment.

The simulation period for T7 Release 12.0 is planned to start on 11 September 2023.

In addition, and prior to the T7 release simulation, Deutsche Börse AG offers a T7 Release 12.0 Cloud Simulation to allow trading participants and Independent Software Vendors (ISVs) to test the T7 Release 12.0 ETI, FIX LF interface, as well as RDI, MDI, EMDI and EOBI interface changes. In the Cloud Simulation, participants can initiate predefined market scenarios and test specific strategies more easily than in a shared environment. The Cloud Simulation is available around the clock for a fixed price per hour and will start on 11 August 2023.

For more information on the T7 Cloud Simulation, please refer to http://www.xetra.com/xetra-en/technology/t7/cloud-simulation.

1.1 New Features and Enhancements Overview

The following new main features and enhancements will be introduced with T7 Release 12.0:

	Relevant for	
	T7 Xetra	**T7 Börse Frankfurt**
MiFID II / MiFIR Enhancements	X	X
Xetra Retail Execution service	X	
Enhancements of Pre-Trade Control checks	X	X
Latency Enhancements	X	X
Further Changes and Enhancements	X	X

1.2 Note on Interfaces

T7 Release 12.0 **will not provide** backwards compatibility for the T7 ETI / FIX LF interface version 11.1, i.e., participants will have to use the new functionality and **will not be able** to connect to T7 with the interface layout version 11.1 anymore, after the production launch of T7 Release 12.0.

Public market and reference data interfaces, including EOBI, EMDI, MDI, RDI/RDF, as well as reports and data files, will not provide backwards compatibility.

1.3 Further Reading

The existing documents have been or will be revised for T7 Release 12.0. The following table provides an overview of the schedule for the publication:

T7 Release 12.0	Derivatives Markets	Cash Markets	Combined	Q2 Jun	Q3/ 2023 Jul	Aug	Sep	Q4/ 2023 Oct	Nov
Preliminary Release Notes	X	X		◆					
Enhanced Trading Interfaces Manual, incl. XSD, XML Representation and Layouts			X			◆	■		●
FIX LF Manual, incl. XSD, XML Representation and Layouts			X			◆	■		●
Market-, Enhanced Order Book- and Reference Data Interfaces Manual incl. XML Fast Templates & FIXML Schema Files			X			◆	■		●
Trader, Admin and Clearer GUI – User Manual	X	X				◆	■		●
Final Release Notes	X	X					◆		
Extended Market Data Services Manual & Underlying Ticker Data Manual incl. XML Fast Templates			X				◆		■
XML Report Reference Manual, Modification Notes & XML Schema files			X				◆		■
Functional Reference			X				◆		
Functional and Interface Overview			X				◆		
Trader, Admin and Clearer GUI – Installation Manual			X				◆		
Participant and User Maintenance Manual	X	X					◆		
Cross System Traceability			X				◆		
Incident Handling Guide			X				◆		
Participant Simulation Guide			X				◆		
T7 Known Limitations for Simulation			X				◆		
Cash Market Instrument Reference Data Guide		X							◆
Exchange Rules & Regulations		X							◆
Market Models		X							◆
T7 Known Limitations for Production			X						◆

◆ Version 1 ■ Version 2 (optional) ● Version 3 (optional)

Please note that the outlined schedule is subject to change.

The documents will be available on the Xetra website www.xetra.com under the path:

> Technology > T7 Trading Architecture > System Documentation > Release 12.0

1.3.1 Future document naming and numbering

Please note that beginning with T7 Release 12.0, the provided documents will follow a different way of naming and numbering: While documents in the past often had the project phase in their name, for which they were written (e.g. "Simulation", "Production"), from now on documents will have names which are independent from the project phase. The upgrade of documents by project phase will be reflected now by the version number only (version 1, version 2, …). Version numbers from now on will be integer numbers only, i.e. version numbers with dot will not occur anymore (e.g. 1.2).

Documents will be updated only once their content changes. This means that there will not be another publication of the same document for later project phases (e.g. Production), if the document does not change.

1.4 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.

1.5 Definitions and Abbreviations

Term/Abbreviation	Description
BBO	Best Bid Offer
BOC	Book-or-Cancel
Börse Frankfurt	Trading venue of FWB, where equities, bonds, ETFs, ETCs, ETNs, mutual funds and structured products are traded
C7	Deutsche Börse Clearing System
C7 BRS	C7 Bilateral Routing Service
C7 SCS	C7 Securities Clearing Service
CEF	Consolidated Exchange Feed
DBAG	Deutsche Börse AG
DSCP	Differentiated Services Code Point, in the IP header of a packet
EMDI	T7 Enhanced price level netted Market Data Interface
EOBI	T7 Enhanced Order Book Market Data Interface
ETI	T7 Enhanced Trading Interface
FIX LF	Financial Information eXchange (protocol) Low Frequency interface
FOK	Fill-or-Kill
FWB	Frankfurter Wertpapierbörse
GTX	Good-till-Crossing
GUI	Graphical User Interface
HF	High Frequency
IOC	Immediate-or-Cancel
MDI	T7 netted price level aggregated Market Data Interface
MIC	Market Identification Code (e.g. XETR)

MiFID	EU Markets in Financial Instruments Directive
MiFIR	EU Markets in Financial Instruments Regulation
PWT	Price without turnover
RDF	T7 Reference Data File
RDI	T7 Reference Data Interface
RLP	Retail Liquidity Provider
RMO	Retail Member Organization
SWIFT	Society for Worldwide Interbank Financial Telecommunication
T7	The trading architecture developed by Deutsche Börse Group
TES	T7 Entry Service
UTC	Coordinated Universal Time
VDO	Volume Discovery Order
XETR	Market Identifier Code (MIC) of trading venue T7 Xetra
XFRA	Market Identifier Code (MIC) of trading venue T7 Börse Frankfurt

2. MiFID II / MiFIR Enhancements

With T7 Release 12.0, Xetra will introduce a dedicated validation scheme for the fields Execution Decision ID, Investment Decision ID, and Client ID in all trading interfaces. The validation scheme relates to the submission requirements of the short code and algo ID information in the transactions. For easier readability, the term short code shall include the algo ID as well in the following.

2.1 Functional Description

2.1.1 Stricter Validations

These validations will come into place:

- Execution Decision ID:
    - The submission of a short code will always be mandatory regardless of the used trading capacity.
- Investment Decision ID:
    - For the trading capacities
        - Proprietary,
        - Issuer/Liquidity Provider,
        - Market Making, and
        - Retail Liquidity Provision,

        the submission of a short code will always be mandatory.

    - For the trading capacities
        - Agency,
        - Riskless Principal, and
        - Retail Agency,

        the submission of a short code will be optional.

        Please note: If either a short code or a qualifier is set, the submission of both short code and qualifier will become mandatory even when transactions are submitted using the trading capacities Agency, Riskless Principal, or Retail Agency.

- Client ID:
    - For the trading capacities
        - Agency,
        - Riskless Principal, and
        - Retail Agency,

        the submission of a short code will be required.

    - For the trading capacities
        - Proprietary,
        - Issuer/Liquidity Provider,
        - Market Making, and
        - Retail Liquidity Provision,

        the short code will need to be empty.

2.1.2 Short Code handling

A submission of a zero as short code or algo ID will no longer be permitted.

The usage of a short code will be mandatory in the Execution Decision ID and in the Investment Decision ID. The option that was supported before T7 Release 12.0, i.e., to leave the Execution Decision ID and the Investment Decision ID empty and to set the respective qualifier to "human", which led to the mapping of the submitting trader's national ID into the trading venue's audit trail, will not be offered any longer with T7 Release 12.0. Regulatory requirements are unchanged. Please find more information about the MiFID II / MiFIR flagging scenarios under

xetra.com > Newsroom > Current regulatory topics > MiFID II & MiFIR > Reference data reporting
> Factsheet: MiFID II / MiFIR Flagging Requirements – Execution decision, investment decision, client ID and DMA

Please note that you will have to adjust your Auto Approval Rules to the new validations concept, otherwise your Auto Approvals will fail.

2.1.3 Special behaviour for the TES type OTC

For the TES type OTC in TES Approval and TES Auto-Approval messages, the submission of the MiFID II fields will not be required. They can be left empty. However, if a short code or qualifier is set, then the combinations will become mandatory.

The T7 Trader GUI will be able to automatically fill Execution Decision ID and Execution Qualifier but will only do so if the user set a default value for them in the application preferences. On login into the T7 Trader GUI, a pop-up window will open to invite the user to set the default value for the Execution Decision ID.

2.1.4 Change in default settings for FIX LF fields

The default settings for the FIX LF fields for the following information will be removed:

Information	Default setting removed with T7 12.0
InvestmentQualifier	~~Human~~
ExecutionQualifier	~~Human~~
LiquidityProvisionIndicator	~~Non_liquidity_providing~~
CommodityHedging	~~False~~

This information is reflected in the fields of the *Parties* group, i.e., PartyID (448), PartyRole (452), PartyRoleQualifier (2376).

3.   Xetra Retail Execution service

After the introduction of T7 Release 12.0, Xetra (MIC: XETR) will enable a new competitive Xetra Retail Execution service open for all trading participants of the FWB. The Xetra Retail Execution service is a best execution offering for retail orders. It focusses on the needs of private investors and retail brokers and aims at the improvement of retail trading on Xetra.

The new service will enable dedicated retail liquidity providers (RLP) to enter retail quotes better than the price within the current order book for retail orders provided by dedicated retail member organizations (RMO). It will be offered in the *Continuous Trading with Auctions* trading model.

3.1   Functional Description

For the new Xetra Retail Execution service, participants who will be registered at the exchange as Retail Liquidity Providers (RLP), will provide quotes and orders, which are marked as retail quotes and orders (in short: RLP quotes). They are marked by the new Trading Capacity for Retail Liquidity Provision (L). Their validity is only Good-for-Day. Double-sided as well as one-sided RLP quotes are allowed, but no zero quantities are allowed. Since RLP quotes will not interact with other RLP quotes or other non-retail orders in the orderbook in instrument state *Continuous*, the RLP quotes will not be disclosed via the T7 order book data streams, but via the Consolidated Exchange Feed (CEF) as product ID 6071 (XETRA_RETAIL).

Trading participants, who will be registered as Retail Member Organization (RMO), will provide orders, which are marked as retail orders (in short: RMO orders). They are marked by the new Trading Capacity for Retail Agency (B). As Execution Restrictions, only IOC, BOC and FOK will be allowed. Retail orders can match against both, an RLP quote, resulting in a retail Price Determination, or against other non-retail orders within the regular Xetra order book, resulting in a regular Price Determination.

While an instrument allowed for the Xetra Retail Execution service is in the instrument state *Continuous*, the RLP quotes can match against the RMO orders, but not against other non-retail orders or quotes.

A retail price determination will only be possible during the instrument state *Continuous*. Since RLP quotes will not participate in auctions (scheduled auctions and volatility interruptions), an auction price determination will always result in a regular Price Determination.

RLP quotes will be fully integrated in the normal matching process. They will not have an advantage in price over other quotes and orders, but they will have an advantage in time over other quotes and orders, i.e., they are executed following a price-retail-time priority instead of a price-time priority. So, e.g., if there is an RLP quote and an order on the same price level, and the order had been entered earlier than the RLP quote, the RLP quote nevertheless has priority.

For RLP quotes / orders, there will be a pegging mechanism to avoid crossed order book situations where the bid limit is above the ask limit, which cannot be resolved by a price determination. The below table specifies the two basic scenarios which need to be resolved using the pegging mechanism, and the corresponding pegging rules:

Scenario	Pegging Mechanism Name and Rule
Crossed book – When a non-retail order (incoming or resting) on one side crosses the limit of an RLP quote on the opposite side.	**Peg-to-Market** The RLP quotes / orders will be pegged to the best limit of the opposite side of the order book (peg-to-market) with an offset, where the offset will be the relevant tick size of the product.
Crossed quote – When two RLP quotes cross each other, i.e., when they would be executable against each other.	**Peg-to-Reference** The last trade price (regardless of it being a retail or a non-retail last price) will be considered for pegging the quotes / orders within the crossed limits of these quotes / orders.

Independent from the pegged limit generated by T7, T7 will also retain the actual (physical) limit of the RLP quote / order provided by the respective RLPs during quote/order entry. T7 will revert the limit of the RLP quote / order to its original limit when the situation which led to the pegging is resolved. The pegged quotes will be displayed via CEF for all CEF clients. The price information will also be displayed via CEF when an RLP quote / order is unpegged to its actual price.

Trades resulting from the new Xetra Retail Execution service will be of a new match type *Retail*. Special statistics for retail trading such as Retail Last Price, Retail Last Trade Quantity and Retail Last Trade Time will be provided. In Clearing and Settlement, the account L (Retail Liquidity Provision) will be mapped to P (Proprietary), and the account B (Retail Agency) will be mapped to A (Agency).

The exchange will decide for which instruments in trading model *Continuous Trading with Auctions* the new Xetra Retail Execution service will be enabled (as a first step, only equities might be supported). Please note that orders flagged as RMO orders, which are entered for an instrument not eligible for the new Xetra Retail Execution service, will not be rejected but will be handled like a non-RMO order.

Please note that an RLP quote will be able to exist together with a non-RLP quote within the same session. While non-RLP quotes replace each other within one session, RLP quotes will not replace non-RLP quotes, and will not be replaced by them. Automatic and mass deletions for RLP quotes are performed the same way as for Designated Sponsor quotes.

For RLP quotes and orders, neither a modification of the Trading Capacity will be allowed, nor an SMP definition. For RMO orders, a modification of the Trading Capacity will be allowed and the SMP functionality will be supported, as for other non-retail orders.

Please note that the Best Bid Offer (BBO) Setting flag for RLP quotes will always be False or Null, while the BBO Setting flag for RMO orders will be handled like for orders entered with the Trading Capacity Agency. RLP quotes will not be considered when the BBO flag is calculated for an incoming order or quote.

The user administrators will have to assign the Trading Capacities (L, B) to their users. The Retail Liquidity Providers will use the existing *Cash Market Maker role* and the Retail Member Organizations will use the existing *Cash Trader* role.

There will be no TES or Xetra EnLight trading for the new Xetra Retail Execution service.

4. Enhancements of Pre-Trade Control checks

With T7 Release 12.0, Xetra will enhance its validation applied for Maximum Order Value (MOV) and Maximum Order Quantity (MOQ) for orders and quotes in order book trading as well as for Xetra EnLight, and TES. The validation will be enhanced by dedicated exchange specified limits, that will apply per instrument and accompany the already available user specified limits, which can be set by the Trading Participant. The minimum of the user limit and the instrument limit will determine the maximum allowed order value and order quantity for a given order per user and instrument. The possibility to skip the Maximum Order Value check and the Maximum Order Quantity check will continue to be available but may only be applied to skip the Trading Participant user specified limit, not the exchange limit.

Furthermore, an additional Price Collar check will be introduced, which cannot be skipped by the Trading Participant.

The new functionalities will be available for the trading venues Xetra and Börse Frankfurt.

4.1 Functional Description

4.1.1 Maximum Order Value

Xetra offers a Maximum Order Value check on order / quote entry and on modification for order book trading, TES and Xetra EnLight. This check is applied as soon as the respective request is sent. The Maximum Order Value limits can be set per user ID in the user maintenance in the T7 Admin GUI. In case of a limit violation, the order/quote, TES, or Xetra EnLight request is rejected with a respective error message.

With T7 Release 12.0, Xetra will enhance the Maximum Order Value check by introducing exchange specified limits for each instrument that will additionally be considered in the Maximum Order Value check. Effective limits for the maximum order value will therefore be the minimum of the Trading Participant's provided user limit and the exchange provided limit per instrument. In case an order/quote, TES, or Xetra EnLight request exceeds one or both limits, the order/quote, TES, or Xetra EnLight request will be rejected with a distinct error message that specifies the limit, which was exceeded.

The possibility to skip the Maximum Order Value check will continue to be available via a flag. However, this flag will only skip the Trading Participant's provided user limit component as it is applied today, not the exchange limit. Disregarding of the flag, the exchange limit will be validated.

4.1.2 Maximum Order Quantity

Xetra offers a Maximum Order Quantity check on order / quote entry and on modification for order book trading, TES, and Xetra EnLight. This check is applied as soon as the respective request is sent. The maximum order quantity limits can be set per user ID in the user maintenance in the T7 Admin GUI. In case of a limit violation, the order/quote, TES, or Xetra EnLight request is rejected with a respective error message.

With T7 Release 12.0, Xetra will enhance the maximum order quantity check by introducing exchange specified limits for each instrument that will additionally be considered in the Maximum Order Quantity check. Effective limits for the maximum order quantity will therefore be the minimum of the Trading Participant's provided user limit and the exchange provided limit per instrument. In case an order/quote, TES, or Xetra EnLight request exceeds one or both limits, the order/quote, TES, or Xetra

EnLight request will be rejected with a distinct error message that specifies the limit, which was exceeded.

The possibility to skip the Maximum Order Quantity check will continue to be available via a flag. However, this flag will only skip the Trading Participant's provided user limit component as it is applied today, not the exchange limit. Disregarding of the flag, the exchange limit will be validated.

The exchange limits for Maximum Order Value and Maximum Order Quantity will be communicated prior to application.

4.1.3 Price Collar check

For the already existing Price Collar check a new extended price range validation will be introduced. The new extended price range validation will be applied only, if the price reasonability check is not applied or skipped by the user. The validation will be applied for all instrument states in which the price reasonability validations are currently done. The new extended price range validation will apply for order book trading.

The extended price range validation cannot be skipped by the user.

5. Latency Enhancements

With T7 Release 12.0, Xetra will introduce the following additional changes and enhancements to streamline and improve message processing and maintenance.

5.1 Immediate Deletion of Quotes on Quote Inactivation

With T7 Release 12.0, it will become possible to delete quotes immediately together with a quote inactivation request. For this, a new valid value *Inactivate and Delete* will be introduced to the tag *MassActionType* (1373) in the Quote Activation Request and the Quote Activation Notification.

5.2 No delay for Quote Activation if the Session does not have any Quotes

With T7 Release 12.0, Quote Activation requests will not be delayed anymore, if the session does not have any quotes.

5.3 DSCP bit now indicating whether Executed Quantity > 1

With T7 Release 12.0, one DSCP bit from the EOBI IP protocol header, formerly used to indicate whether it is a simple or a complex instrument, will now be used to indicate whether the executed quantity was greater than 1 lot.

5.4 New EOBI Information about remaining aggressive Quantity

With T7 Release 12.0, the EOBI Execution Summary will be enhanced by a group of three fields with information about a possibly remaining quantity in the book. The fields will be filled only in Continuous Trading.

New group RemainigOrderDetails:

- TrdRegTSPrevTimePriority (21026). Shows the priority of the modified order that became aggressive. Filled only in case the execution resulted from a modification.
- DisplayQty (1138). New remaining size.
- Price (44). New remaining price.

Furthermore, the existing field AggressorTime (2445) will be moved to the end of the message.

6. Further Changes and Enhancements

With T7 Release 12.0, Xetra will introduce the following additional changes and enhancements.

6.1 Decommissioning of Volume Discovery Orders

With T7 Release 12.0, the possibility to enter Volume Discovery Orders (VDO) will be decommissioned. Volume Discovery Orders were a special variant of an iceberg order with a second limit for Volume Discovery matching. A special validity Good-Till-Crossing (GTX) was supported for them.

In all interfaces and GUIs, the order type VDO, its special second limit field, and the special valid value Good-till-Crossing (GTX) for the order validity (respectively TimeInForce code) will be removed.

6.2 Null Spread Quotes in the trading model *Continuous Auction with Market Maker*

With T7 Release 12.0, Null Spread quotes will be introduced to the trading model *Continuous Auction with Market Maker*, to make it more similar to the trading model *Continuous Auction with Specialist*. Null Spread quotes will be allowed for the following quote types:

- Quote type *Indicative*.
- Quote type *Price without turnover* (PWT), resulting in the publication of a PWT if the conditions for a PWT are met.
- Quote type *Matching*, if the Market Model parameter *allowIndicativeQuote* is set to TRUE and the instrument state is CALL.

Please note, that any remainder of a Matching quote is deleted at the end of the transaction, i.e. no executable quote quantity remains in the book. The auction execution triggered by a Matching quote will be implemented along the same rules as the auction execution in the trading model *Continuous Auction with Specialist*, i.e. the Matching quote will be executed with lowest priority, and with an effective self-match prevention for the Matching quote, so that the Matching quote will be executed only either on the bid side or on the ask side, if there is any quote execution at all. This may imply a limited violation of the price-time priority in cases where a Stop Limit order with an order limit equal to the quote limit is triggered and executed at the price of the Matching quote on the same side.

No Null Spread quotes will be allowed for the quote type *Standard*. Entering a Null Spread Matching quote in Pre-call will be declined.

6.3 TES Trading: New field *TradePublishIndicator* (1390) in ETI messages

With T7 Release 12.0, the existing mandatory field *TradePublishIndicator* (tag 1390) will be added to the following ETI messages:

- Enter TES Trade Request
- Modify TES Trade Request
- Approve TES Trade Broadcast

Please note that the field already exists for this message:

- TES Trade Broadcast

For requests, the field will have the following valid values:

Value	Description
0	Do Not Publish Trade
1	Publish Trade

For broadcasts, the field will have the following valid values:

Value	Description
2	Deferred publication to market
3	Published to market

The publication will continue to be performed by CEF.

Furthermore, the existing field *isDisclosed* will be added in XML report TC545 Daily TES Maintenance as an optional field.

6.4 Dedicated Rejection Reason for PTRL Consumption violation

With T7 Release 12.0, in case of a rejection of a transaction due to an exceeded PTRL consumption, a new dedicated rejection reason will be returned to customers via the ETI *SessionRejectReason* (373) and the FIXML *BusinessRejectReason*(380) fields:

    10016   Pretrade Risk Limit exceeded

6.5 Definition of Pre-Trade Risk Limits via HF sessions

With T7 Release 12.0, it will be possible to inquire and define Pre-Trade Risk Limits (PTRL) via HF sessions.

6.6 Decommissioning of the Contract Notes Reports

Xetra Contract Notes Reports applicable for the trading venues Xetra and Börse Frankfurt are currently available in SWIFT MT512 and in a related printable version. Due to limited usage, Deutsche Börse has decided to decommission the Xetra Contract Notes Reports in Q4 2023, as part of the T7 Release 12.0 scope.

This decommissioning of Xetra Contract Notes Reports will affect only those Trading Participants who are still using the service and who are therefore required to take appropriate action.

Please be aware that all adjustments on the Trading Participants' side need to be completed by November 2023, as the decommissioning date coincides with the introduction of the T7 Release 12.0 in production.

For more information see Xetra circular 050/2022.

6.7 Technical migration of the processing of bilateral trades (non-CCP eligible trades)

With the introduction of T7 Release 12.0, the post trade processing of bilateral trades (non-CCP eligible trades), including the bilateral aggregation service, will be migrated to a new technical infrastructure (C7). Besides the decommissioning of the Contract Notes report (please see subchapter 6.6) there will be no functional changes to the existing services.

6.8 Encryption of data traffic on leased lines

With T7 Release 12.0, the data traffic, not the complete traffic, on leased lines will be SSH encrypted. Since only the data traffic is concerned, there is no need for customers to care for SSH keys.

7. Change Log

Version	Date	Log entry
1	29 June 2023	Final