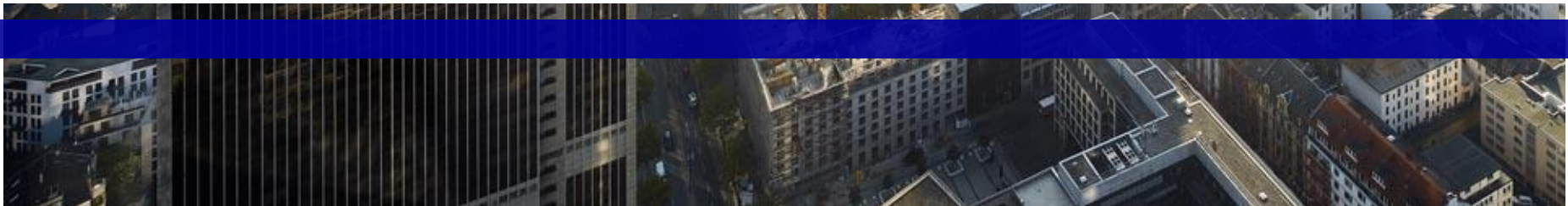**DEUTSCHE BÖRSE CASH MARKET**

Migration of Trading Venue Xetra (XETR)
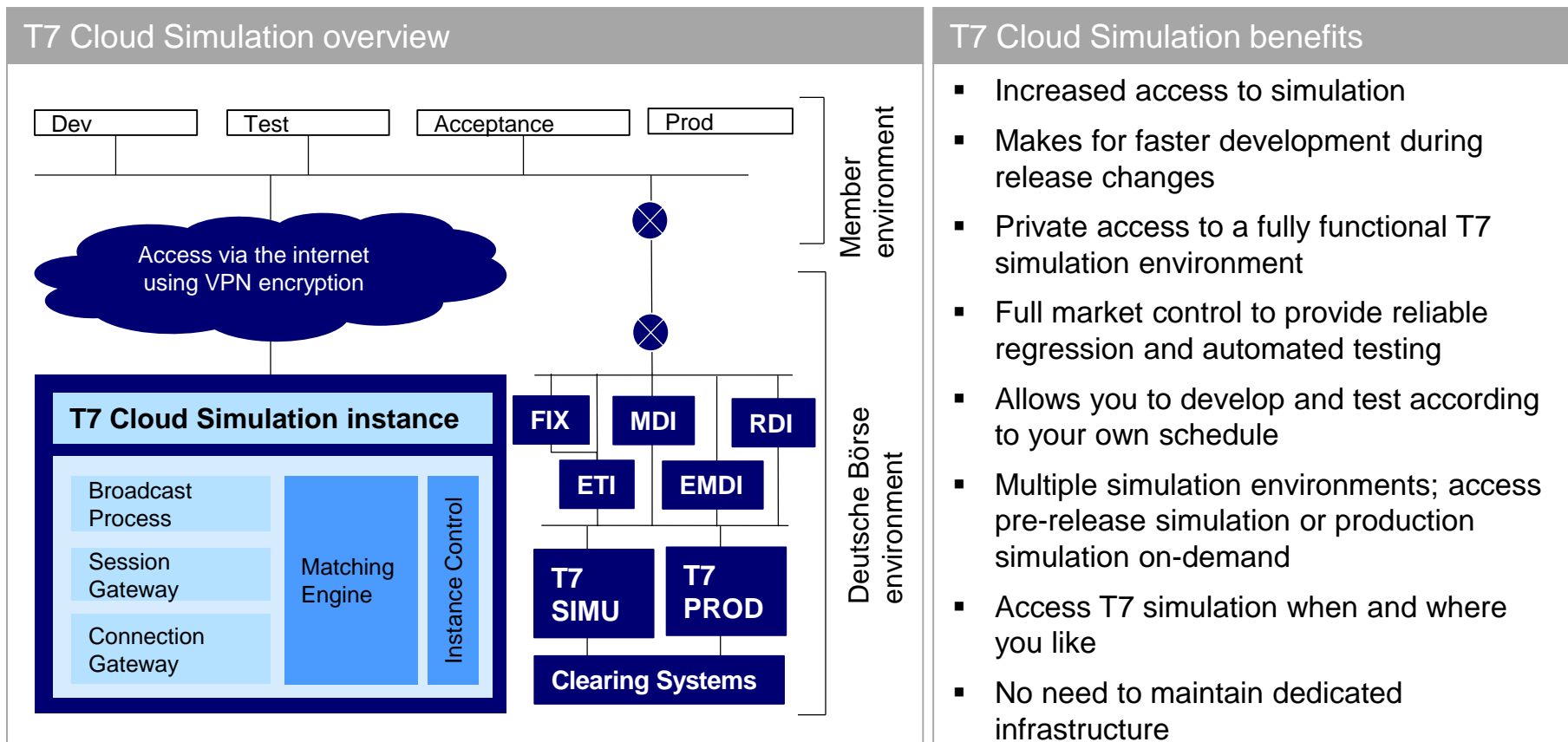## T7 Cloud Simulation - On-demand access simulation

T7 Cloud Simulation in a nutshell

T7 Cloud Simulation allows members and customers to …

- Control the market:
    - Create your own order books
    - Set the market trading phase
    - Change the state of specific products
    - Use the Liquidity Generator and Auto Matcher
    - Enter trade reversals
    - Test failover scenarios
    - Predefine market scenarios and test specific strategies that would not be possible in a shared environment
        - Create unique order books
        - recreate specific trading scenarios

- Test strategies that are difficult / impractical to test in a shared environment
- Perform regression testing based upon own parameters
- Automate application testing to decrease development costs

T7 Cloud Simulation service offering and benefits

Participants benefit from Deutsche Börse's T7 Cloud Simulation platform.

T7 Cloud Simulation overview

T7 Cloud Simulation benefits

- Increased access to simulation

- Makes for faster development during release changes

- Private access to a fully functional T7 simulation environment

- Full market control to provide reliable regression and automated testing

- Allows you to develop and test according to your own schedule

- Multiple simulation environments; access pre-release simulation or production simulation on-demand

- Access T7 simulation when and where you like

- No need to maintain dedicated infrastructure

T7 Cloud Simulation overview

The T7 Cloud Simulation allows participating customers to deploy a private, on-demand instance of a T7 simulation environment for testing and development purposes. This instance is created and runs within a public cloud infrastructure allowing customers access from any computer with internet access anywhere in the world.

The T7 Cloud Simulation does not replace the T7 permanent simulation environment; it enhances it. Its low-cost, consumption-based billing model offers customers easy access to a commitment-free environment for developing and testing trading software. Participants use and pay for as much access to the T7 Cloud Simulation as they choose. There are no minimums or maximums.

Participants can choose from two different simulation environments when they request an T7 Cloud Simulation instance. They can choose to access the same version of software that is running in the Permanent Simulation environment, the same version running in production, or both at the same time.

Supported Interfaces

T7 Cloud Simulation offers members access to T7's standard interfaces including:

Infrastructure components	Trading interfaces	Market and Reference data
- ETI Connection Gateway - ETI Trading Gateway - FIX Gateway - Broadcast Gateway - Matching Engine	- Enhanced Trading Interface (ETI) - FIX	- Reference Data Interface (RDI) - Market Data Interface (MDI) - Enhanced Market Data Interface (EMDI) - Enhanced Order Book Interface (EOBI)

Access includes four unique member IDs, each enabled with:

- four trader IDs (one security coordinator, one head trader and two traders)

- high-frequency ETI sessions

- low-frequency ETI sessions

T7 Cloud Simulation user experience

Step 1: Member logs into the T7 Cloud Simulation (CS) start page and requests an Instance

T7 Cloud Simulation start page

**Step 2:
A CS instance spins up for the member**

T7 Cloud Simulation (CS) start page

T7 CS instance
Instance Control
T7 Architecture

Step 3: Member logs into the Instance Control to control their Cloud Simulation Instance

T7 CS instance
Instance Control
T7 Architecture

Step 4: Member connects to CS Instance via VPN over the Internet

T7 CS instance
Instance Control
T7 Architecture

Step 5: Member develops / tests their software

T7 CS instance
Instance Control
T7 Architecture

Step 6: When finished, member logs into the T7 Cloud Simulation Launchpad to terminate the CS instance

T7 CS
Start Page

T7 Cloud Simulation limitations

Deutsche Börse's T7 Cloud Simulation platform is different from the Permanent- or Release- Simulation environments. Beside its benefits it has limitations:

- No GUI Access (which means):
  - No user/entitlement maintenance
  - No trade enrichment maintenance
  - No trading user or business unit stop actions
  - No book order limits maintenance
  - No product state messages

- No connection to Clearing (which means):
  - You cannot test clearing / end-to-end trade processing
  - No Member risk actions will be processed
  - No Transaction-Size-Limit / Max-Order-Quantity maintenance

- You cannot save data from an instance for audit trail or reports for later use

- Support is limited due to the information available is limited to your private instance

- The order book is empty when starting your private instance

- You can only use the standard Member ID's provided (it is not possible to create an instance with your specific Member ID)

- There is no Market Supervision and you can't test against other 'real' participants

T7 Cloud Simulation Outlook

Deutsche Börse's T7 Cloud Simulation platform is highly customisable. We plan to launch further enhancements and functionality to complement our service in future releases, including:

- Mass Cancellation notifications

- Sophisticated automated trade-generation scripts

- Intraday product expirations

- Basic reporting / audit trail in the event of updated regulatory requirements

- Historical order book data subscriptions

Thank you for your attention!

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