



Open Day 2017

T7[®] – what happens on order management interfaces (ETI / FIX GW)

Vikram Opal and Samantha Baker

5 October 2017

Contents – ETI

2 Changes common for all
markets

13 Changes specific to the Eurex
market

15 Changes specific to the
Xetra market



2

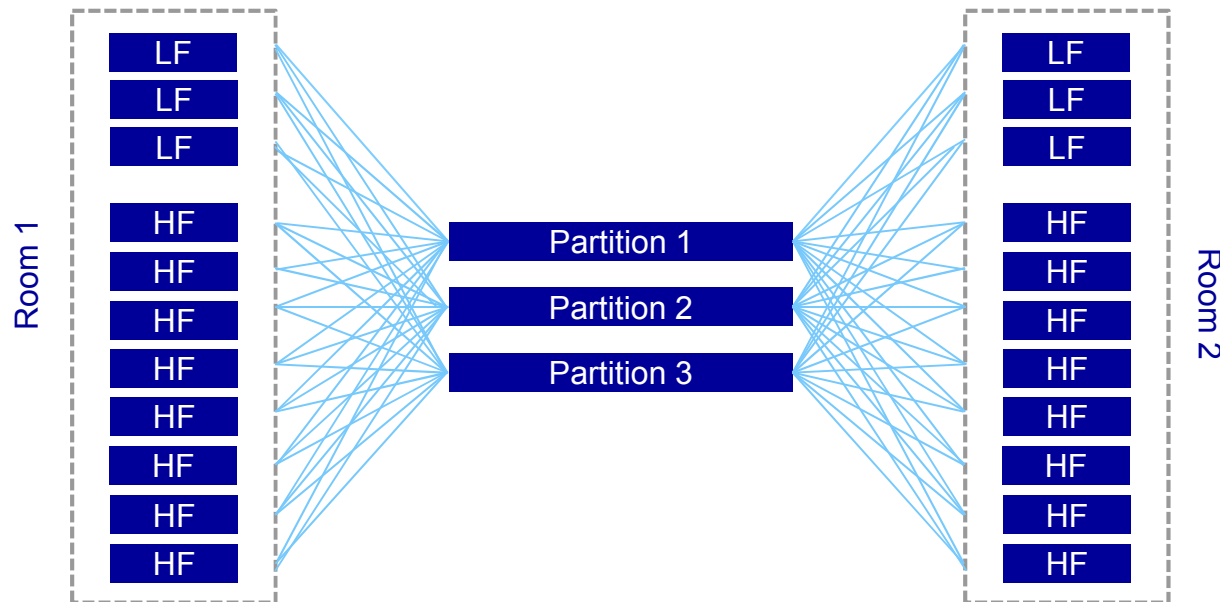
Changes common for all markets

Partition specific gateways – current set-up

Relevant for T7[®] Eurex and T7 Xetra FFM markets

At present, multiple paths to the matching engine are provided via:

- 22 gateways: 16 high frequency (HF), 6 low frequency(LF)



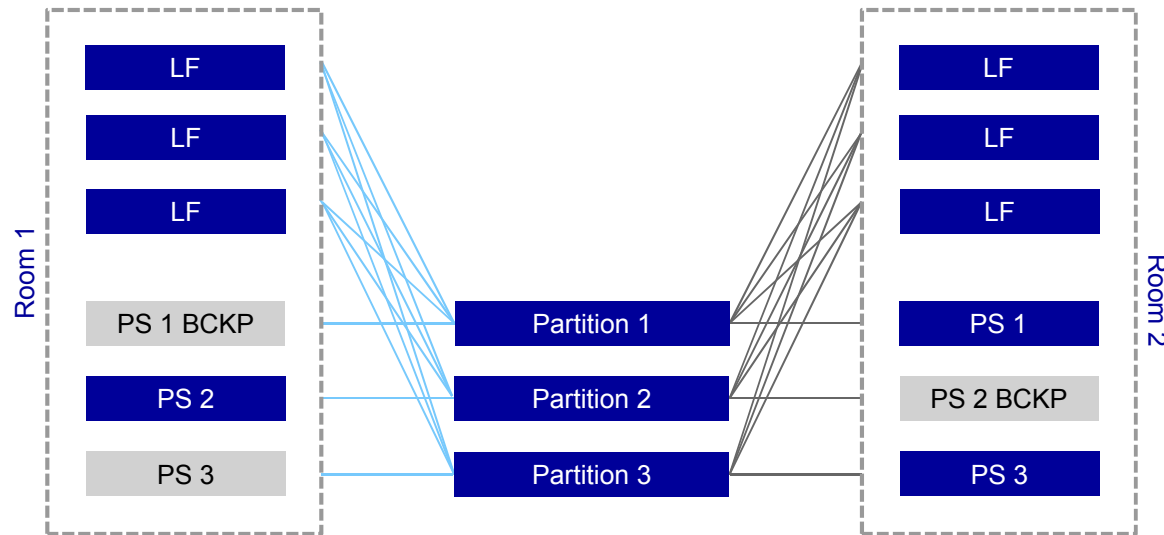
Observations (= motivations to improve)

- Latency-variance between the trading participants' installation and the exchange matching engine
- Statistical advantages in the current gateways set-up

Partition specific gateways – future set-up

Relevant for T7[®] Eurex and T7 Xetra markets

- Partition specific (PS) gateways will replace the existing HF gateways and will allow routing only to a specific partition → as a result, there will be only one active fast lane to a partition



- Each partition will have a primary and backup PS specific gateway for failover purposes
- Sessions may login to only one PS gateway at a time and have to specify the partitionID in their initial connection request

Partition specific gateways – future set-up and migration

Relevant for T7[®] Eurex and T7 Xetra markets

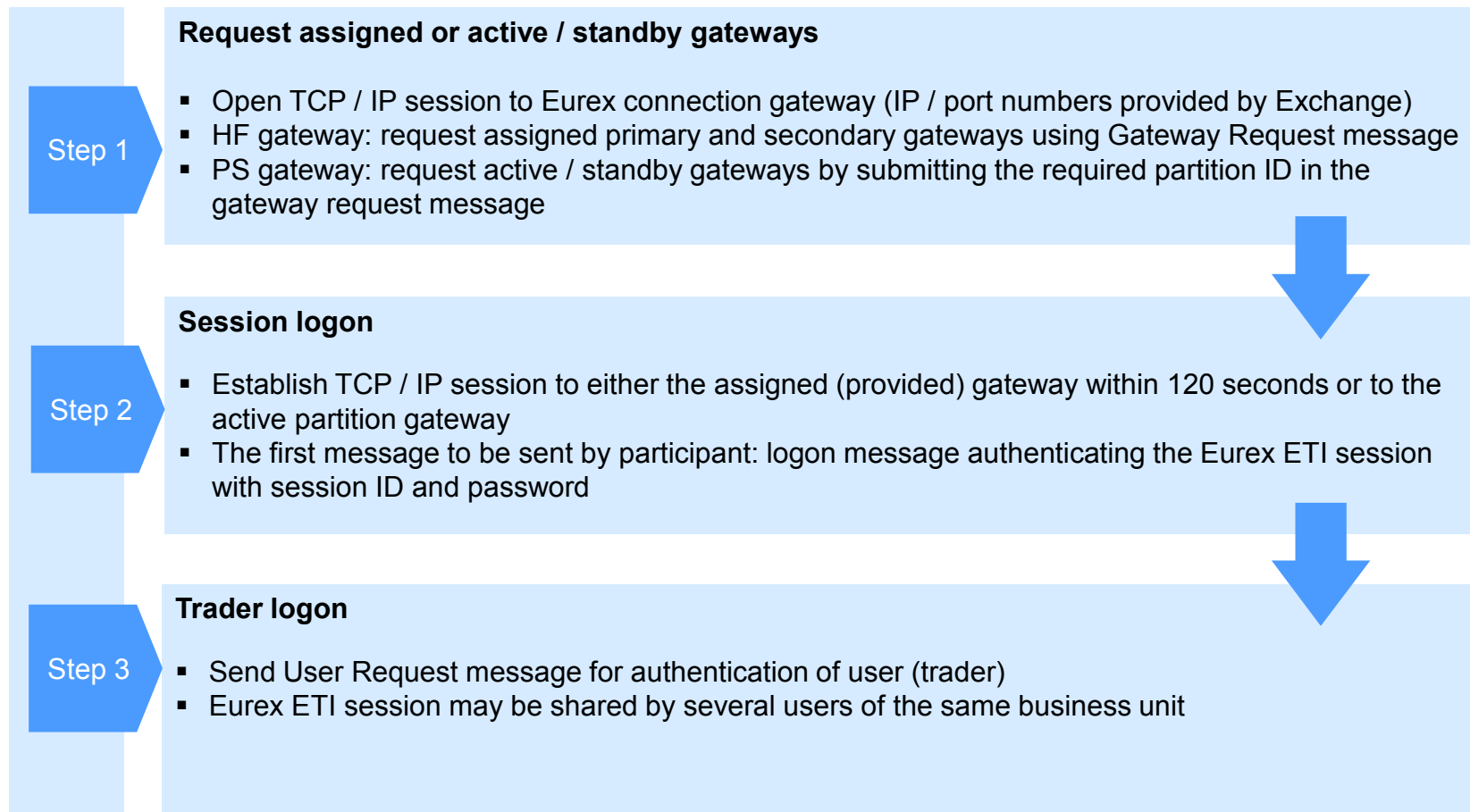
- Parallel operation of PS and HF gateways will be possible during the migration phase
- A new limit on the maximum number of sessions per business unit that can login to a single PS gateway at any given point in time will be introduced
- A migration plan will be announced and is planned for completion in Q1 2018
- LF sessions will remain unchanged and allow routing to all partitions
- Only HF sessions are allowed to login to PS gateways

Partition specific gateways

Connection, failover and session handling (1/2)

Connection

- Good news: the three-step session-to-gateway logon procedure remains mostly unchanged



Partition specific gateways

Connection, failover and session handling (2/2)

Failover and session handling

- Upon **failover** of a PS gateway:
 - the standby PS gateway will take over
 - sessions that were logged in on a failed gateway will be logged out
 - all quotes and non-persistent orders will be deleted
 - **(new)**: to allow orderly and fair order management, there will be a predefined period in which order management will be suspended via the PS gateway on affected partitions after a PS gateway has failed over

- In case of a loss of network connectivity, “single liners” will be able to reach the gateway in room A via B network with a certain delay.

- Focus days for PS gateway failover tests will be provided in the T7[®] simulation environment.

Partition specific gateways – some thoughts on migration

Relevant for T7[®] Eurex and T7 Xetra markets

- Which products do we trade? (set-up a products-to-partition mapping table using reference data)
- Do we need access to the fast lane with PS gateways at all / to all partitions?
- Do we need more sessions?
- Do we need LF sessions so that we can access all partitions?
- Will we need to keep track of changes to the product-to-partition mappings?
 - (Yes)
- Do I need to talk to my TKAM about this?

Enhancements to meet the MiFID II regulatory requirements

- **Pre-trade controls** Price collar check, Order value(ValueCheckTypeValue), order quantity

- **Liquidity provision indicator** OrderAttributeLiquidityProvision

- **Audit trail reporting**
 - Client identification code PartyIDClientID
 - Investment decision within firm PartyIdInvestmentDecisionMaker,, PartyIdInvestmentDecisionMakerQualifier,
 - Execution within firm ExecutingTrader, ExecutingTraderQualifier

- **For Xetra: tick size regime** A new delete reason reflecting the change of a tick size rule will be introduced

- **Information for exceptional circumstances and stressed market conditions** Will be published via ETI news messages

New: based upon popular demand

ETI sub version information on the wire

- Helps to provide ETI applications a method to stay up-to-date with the latest changes to the interface and inline with the version used by the gateway
- ETI session logon response contains a new field “DefaultCstmAppVerSubID” and will contain values in the following format
 - Cash market : C9999 (C followed by a number)
 - Derivatives market : D9999
- The sub version is reflected in the first page of the ETI reference document and the xml

ETI Version	6.0
ETI Subversion	D0001
Build Version	6.0.386.ga-6000371-44
Date	12. September 2017

```
eti_Derivatives.xml x
1 <?xml version="1.0" encoding="UTF-8"?>
2 <!--
6 <Model name="eti Derivatives" version="6.0" subVersion="D0001" buildNumber="6.0.386.ga-6000371-44">
9228
```

A word on backward compatibility

- With release 6.0 **no backward compatibility** is provided to the previous release for ETI, FIX and market and reference data interfaces

Support for non-persistent GTC orders

Via HF and LF sessions

- **New:** with Release 6.0, it will be possible to enter non-persistent GTC limit orders via HF and LF sessions (with R 5.0 it is only possible to enter a GTC via a LF session)
- Non-persistent GTC orders will be persisted by T7[®] end-of-day processing.
- On the next day, these GTC orders will become part of the T7 order book (and be restated), regardless of the availability of the owning session.
- **New:** HF sessions will also receive restatements
- Non-persistent GTC orders will get removed in case of T7 ME failure / failover or if the owning session:
 - disconnects
 - logs out
 - loses connection



13

Changes specific to the Eurex market

Changes specific to the Eurex market

- **Selective Request for Quote service (SRQS)**
 - To (electronically) record and formalise the steps involved prior to the entry of off-book transactions
 - New set of requests, responses and broadcast messages
 - Service availability is announced via new broadcast „Service availability market“
 - Available via LF sessions only

- **Entry of leg trade prices for Trade Entry Service (TES) trades in complex instruments**

- **Calendar spread trading in Total Return Futures**

- **Initial boundary price based on settlement price and quote spreads**
 - The price validations for TES trading will be enhanced to use the previous day settlement price as reference price and calculate minimum and maximum price boundaries around it by using the quote spreads

For further information on new fields and messages, refer to the section “3.3 T7 Enhanced Trading Interface and FIX Interface” in the T7 Release 6.0 Release Notes document



15

Changes specific to the
Xetra market

Changes specific to the Xetra market

Xetra BEST functionality

- To guarantee execution prices better than the current order book price

Volume Discovery Service

- Will offer access to “dark” and “lit” liquidity by combining the benefits of an iceberg order with those of a midpoint order

Designated Sponsor quote request

- Which will give participants the possibility to decide who will be informed about their Request for Quote (RFQ)

For further information on new fields and messages, refer to the section “3.3 T7 Enhanced Trading Interface and FIX Interface” in the T7 Release 6.0 Release Notes document

Links to further information

Documentation for Eurex

- www.eurexchange.com > Technology > T7 Trading architecture > System documentation > Select the required release > Trading Interfaces > Eurex Enhanced Trading Interface
- For example for Release 6.0:
<http://www.eurexchange.com/exchange-en/technology/t7/system-documentation/release6>

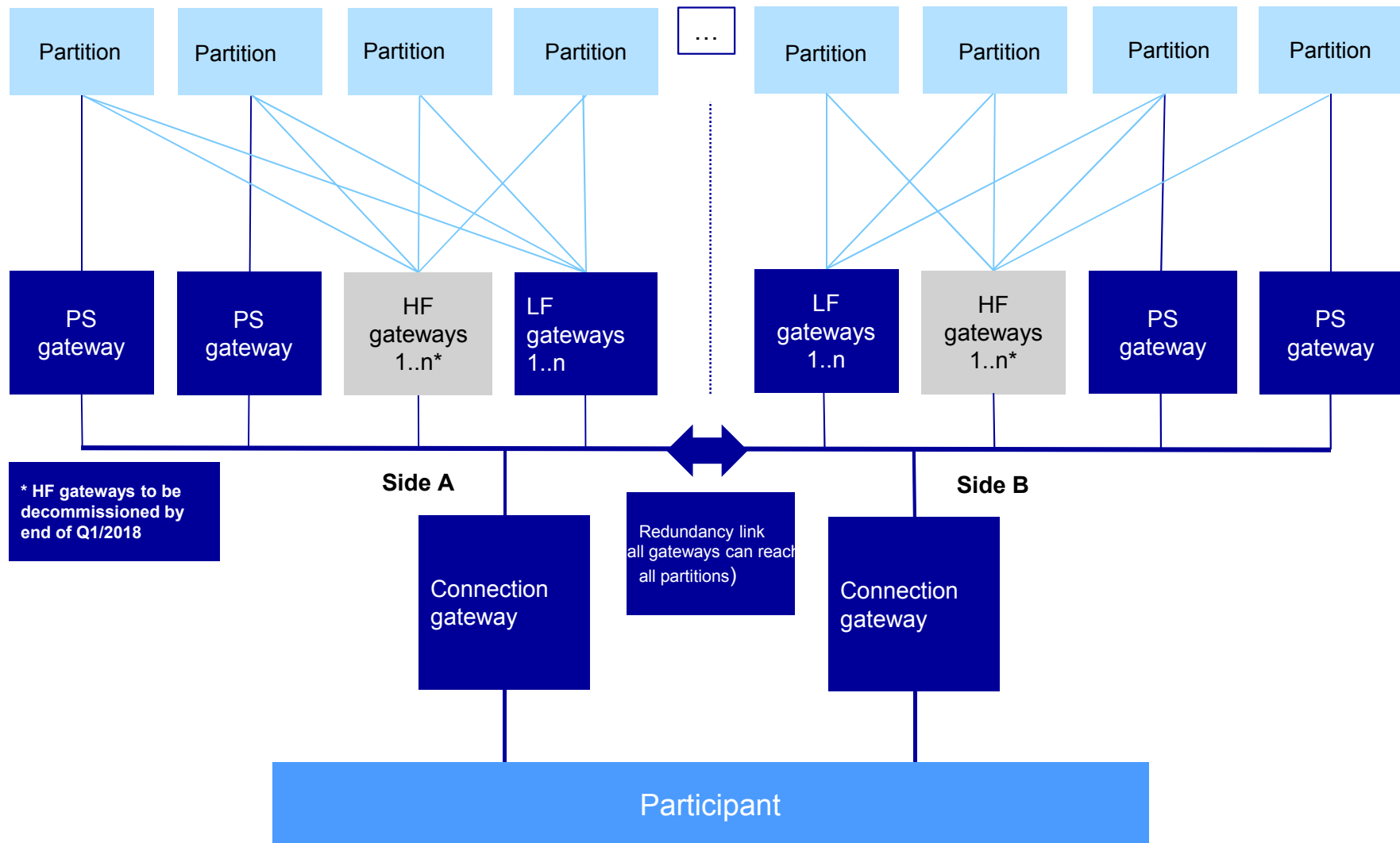
Documentation for Xetra

- www.xetra.com > Technology > T7 Trading architecture > System documentation > Select the required release > Trading Interfaces
- For example for Release 6.0:
<http://www.xetra.com/xetra-en/technology/t7/system-documentation/release6>

Tip: Go through the release notes and the change log in the respective ETI documents to get a quick view of upcoming changes

Backup slides

ETI gateway landscape after completion of migration to partition specific gateways



Contents – FIX Gateway

21 FIX Gateway – rationale

23 FIX Gateway – technical overview

26 FIX Gateway – set-up and functionality



21

FIX Gateway Rationale

FIX Gateway

Rationale

Objective

- Enable access to Xetra[®], Eurex T7[®] and cash markets on T7 via the standard FIX protocol and FIX session layer
- Thus reducing implementation effort on participant side
- Faster time to market expected

Main target group

- Order-routing applications
- Trade capture applications (e.g. trade reconciliation for clearing departments)

Why do we support FIX 4.2 and FIX 4.4?

- FIX 4.2 is still the preferred FIX connectivity solution for many firms. Even after the launch of more advanced versions it still remains the most popular one.
- FIX 4.4 is becoming more and more popular.



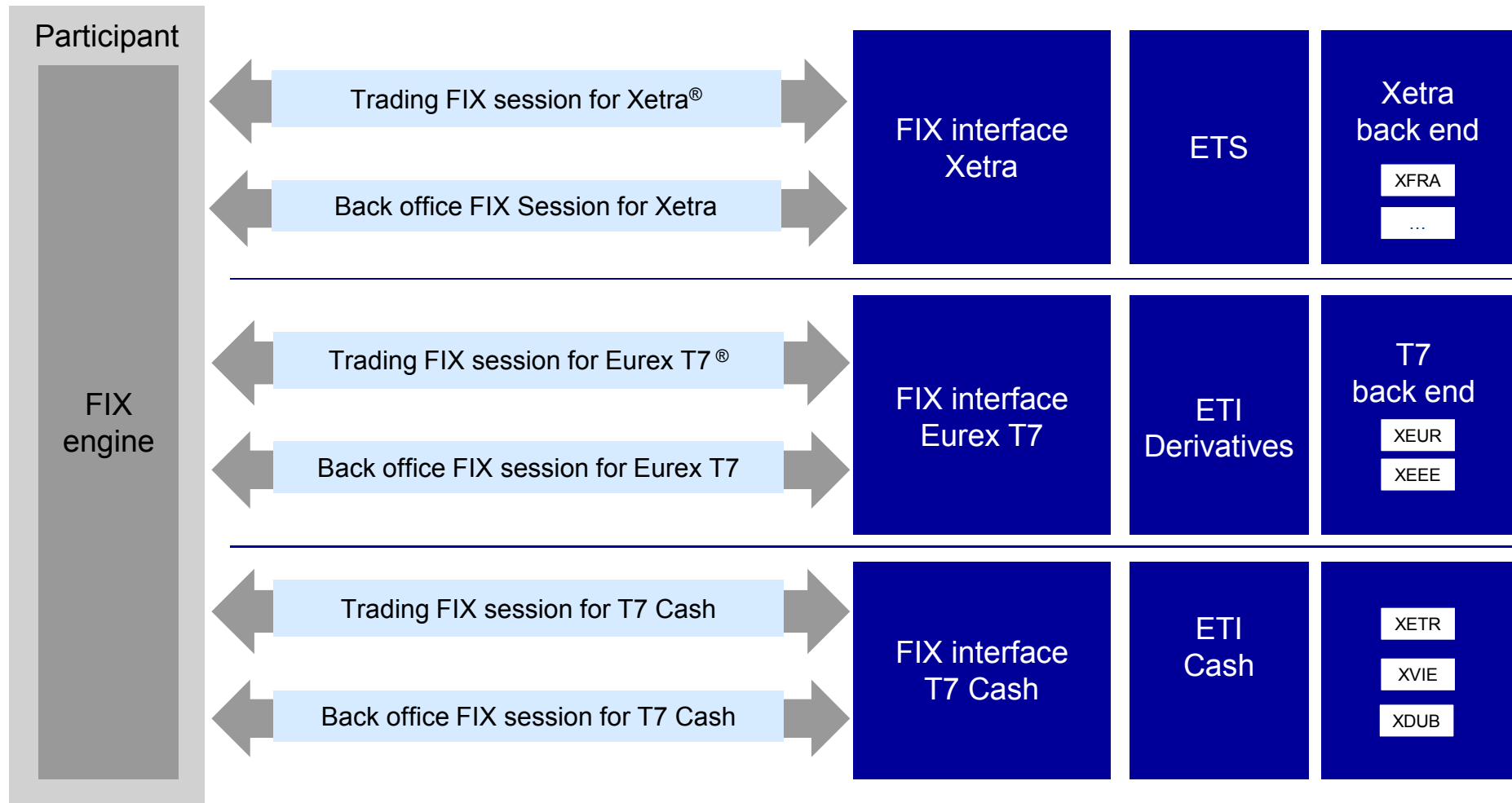
23

FIX Gateway

Technical overview

FIX Gateway

Technical overview



FIX Gateway

Technical architecture overview – session concept

The Xetra[®], Eurex[®] T7 and T7 Cash FIX interfaces support two types of FIX sessions:

- **Trading FIX session**

- It is used for order management.
- Each session will only receive information for all of its own orders and their executions.
- It can only maintain own orders.
- One session can be shared by several traders.
- Note: all order and execution information received via trading FIX sessions is preliminary only and not legally binding.

- **Back office FIX session**

- Drop copy for persistent orders on member level (Xetra) or standard orders per business unit respectively (Eurex Exchange's T7, T7 Cash).
- All trade notifications of the member (Xetra) or all on-exchange trade notifications (with exception of TES entries) of the business unit (Eurex Exchange's T7, T7 Cash), respectively, are provided.
- Trade reversals will only be propagated via the back office FIX session.
- Note: only trade capture reports are legally binding.

A modern office interior with a man and a woman in business attire talking near a large window. The man is wearing a dark suit and a red tie, and the woman is wearing a dark blazer. They are standing on a mezzanine level, looking at each other. The background shows multiple floors of the office building with glass railings and large windows.

26

FIX Gateway

Set-up and functionality

FIX Gateway

Cash T7 migration – Xetra FIX Gateway vs T7 Cash FIX Gateway

	Xetra FIX Gateway	T7 FIX Gateway for Cash
Supported FIX versions	FIX 4.2 and FIX 4.4	FIX 4.2 and FIX 4.4
Instrument identification	ISIN, Isix	ISIN, SecurityID
Back office session functionality	Functionality on member level <ul style="list-style-type: none"> Trade confirmations Drop-copy for persistent orders (optional – activation via Xetra Member Section) 	Functionality on business unit level <ul style="list-style-type: none"> Trade confirmations Drop-copy for standard orders (optional - activation via Xetra Member Section)
Trading session functionality	<ul style="list-style-type: none"> Order handling Quote request Trade reporting OTC trading functionality (Xetra Trade Entry) 	<ul style="list-style-type: none"> Order handling Cross and Quote request Risk control events
Initial order transfer / order book replay	Optional Can be deactivated via Xetra Member Section	Mandatory Cannot be deactivated
Supported order attributes	Persistent, non-persistent	Only standard orders (no support for lean orders) Persistent, non-persistent
Support for all order types, price conditions, validity- and execution restrictions implemented in back end	✓	✓

FIX Gateway

Cash T7 migration – Eurex T7 FIX Gateway vs T7 Cash FIX Gateway

	Eurex T7 FIX Gateway	T7 FIX Gateway for Cash
Supported FIX versions	FIX 4.2 and FIX 4.4	FIX 4.2 and FIX 4.4
Instrument identification	SecurityID	ISIN, SecurityID
Back office session functionality	Functionality on member level <ul style="list-style-type: none"> Trade confirmations Drop-copy for persistent orders (optional - activation via Eurex Member Section) 	Functionality on business unit level <ul style="list-style-type: none"> Trade confirmations Drop-copy for standard orders (optional – activation via Xetra Member Section)
Trading session functionality	<ul style="list-style-type: none"> Order handling Quote and Cross request Risk control events 	<ul style="list-style-type: none"> Order handling Quote and Cross request Risk control events
Initial order transfer / order book replay	Mandatory Cannot be deactivated	Mandatory Cannot be deactivated
Supported order attributes	Only standard orders (no support for lean orders), persistent, non-persistent	Only standard orders (no support for lean orders), persistent, non-persistent
Support for all order types, price conditions, validity- and execution restrictions implemented in back end	✓	✓

FIX Gateway

New – Xetra 17.0, Eurex T7 and Cash T7 6.0

MIFID II Regulatory Enhancements

Audit Trail Reporting

- Client ID
- Executing Trader & Executing Trader Qualifier
- Investment Decision Maker & Investment Decision Maker Qualifier

Pre-Trade Controls

Liquidity Provision Indicator

In addition to...

Xetra Best (T7 Cash)

Volume Discovery Service (T7 Cash)

Designated Sponsor Quote Request (T7 Cash)



30

Time for Q&As



Thank you for your attention.

Contact

Technical Key Account Management

E-mail cts@deutsche-boerse.com

Phone number: use your VIP number

