

Open Day – Deutsche Börse IT conference 2011

Trading and market data via the Xetra[®] & Eurex[®] FIX interfaces

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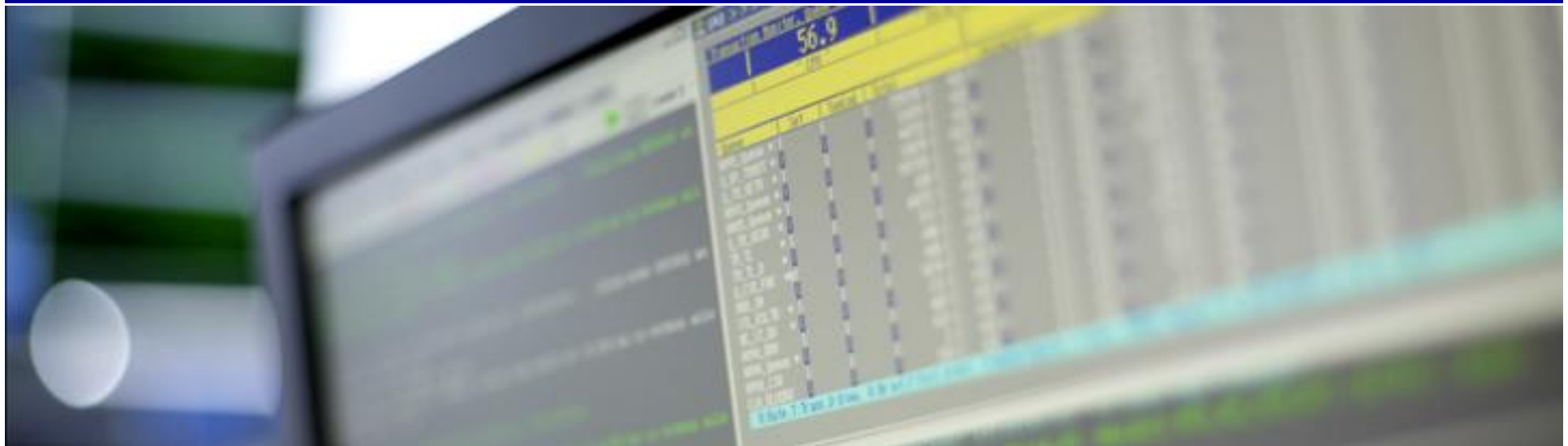
Eschborn, 5 October 2011



Agenda

- n Introduction
- n New FIX interface portfolio
- n FIX gateway
 - n Functional scope
 - n Limitations
- n Market Data Interface
 - n Overview
 - n Functional scope

New FIX Interface Portfolio



New FIX interface portfolio

Key advantages for members

- n FIX interfaces will ease the integration into existing member infrastructure
- n Reduced effort implementing release updates
- n Reuse of existing network connectivity is possible

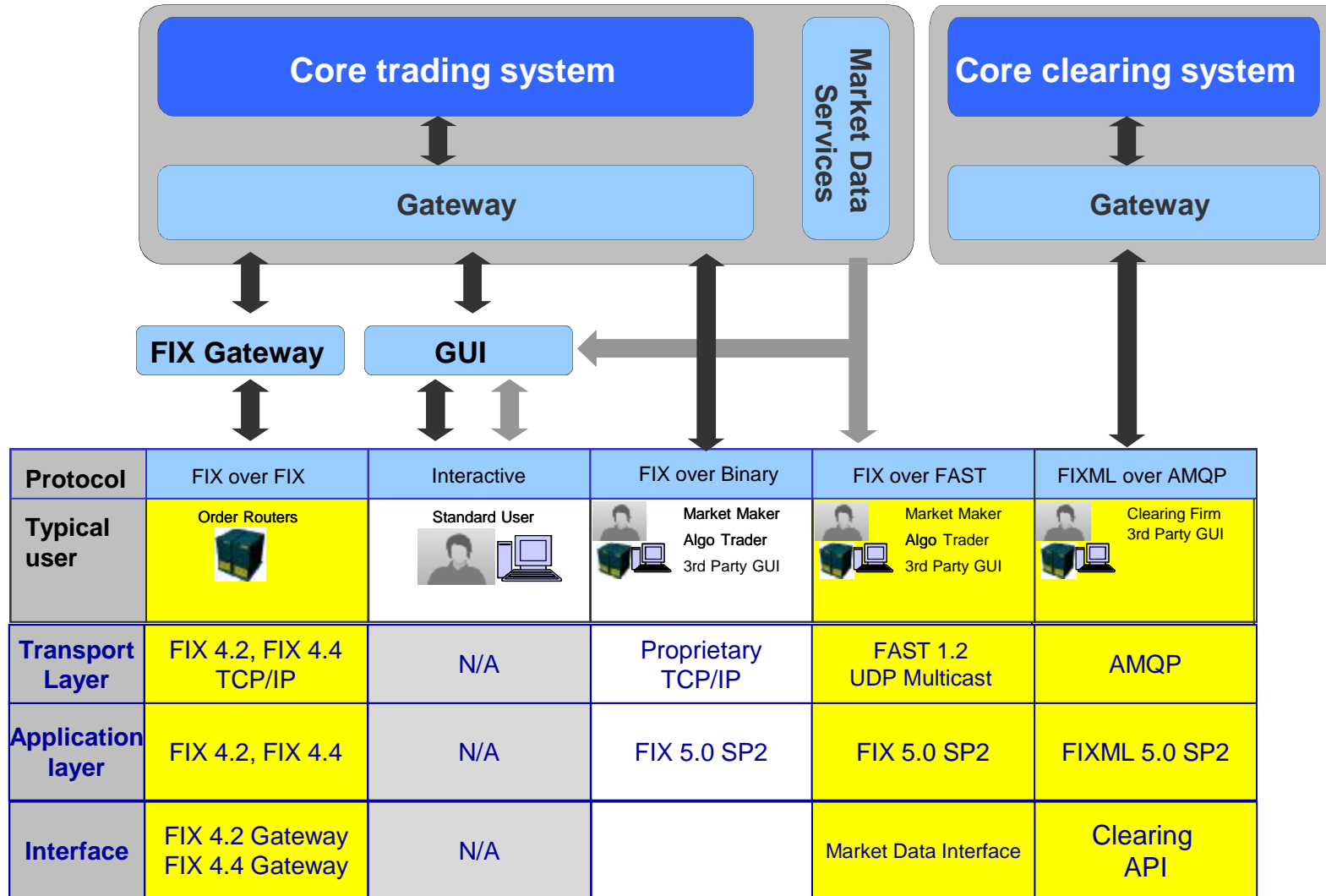
New FIX Interface Portfolio Overview

- n FIX Gateway
 - n Standard FIX-based order routing to Eurex[®] and Xetra[®] markets
 - n Will be introduced with Eurex Release 14.0 and Xetra Release 12.0

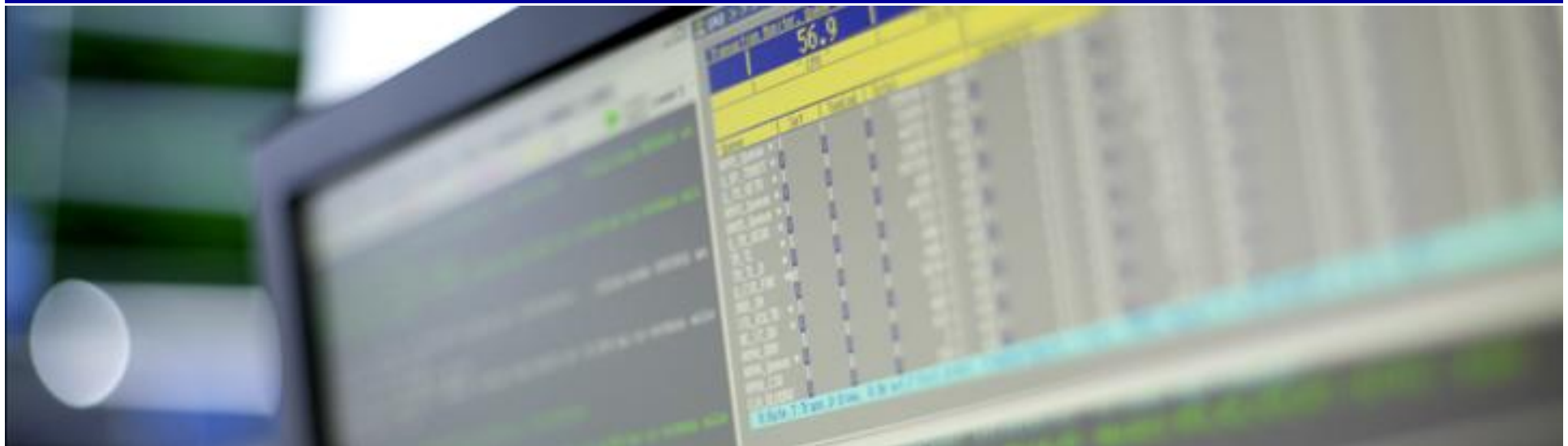
- n Market Data Interface
 - n Standard FIX/FAST netted multicast market data feed
 - n Will be introduced with Eurex Release 14.0 and Xetra Release 12.0

- n FIXML Clearing API
 - n Standardised interface for derivatives clearing and Eurex OTC trade entry
 - n Will be introduced with Eurex Release 14.0

New FIX Interface Portfolio – system landscape



FIX Gateway



FIX Gateway

General functional scope

The FIX Gateway will provide:

- n Order routing / order handling functionalities
 - n Order entry (simple instrument): New Order Single (D)
 - n Order entry (complex instrument): New Order Multileg (AB)
 - n Order cancellation: Order Cancel Request (F)
 - n Order modification (simple instrument): Order Cancel Replace Request (G)
 - n Order modification (complex instrument): Multileg Order Cancel Replace (AC)
 - n Order confirmation / execution / status information: Execution Report (8)

- n Trade confirmation functionality
 - n Trade confirmation on member level: Trade Capture Report (AE)

Eurex[®] FIX Gateway

Functional scope for Eurex Release 14.0

- n All Eurex trading models are supported.

- n Strategy creation
 - n Security Definition Request (c)

- n Trade confirmations on member-level (for book trades only) and trade reversals
 - n Please note: no clearing information is provided (à FIXML Clearing API)
 - n Trade Capture Report (AE)

Eurex[®] FIX Gateway Supported markets

- n Eurex[®] (XEUR)
 - n including European Energy Exchange[®] products
- n Eurex[®] Vienna (XVIE)
 - n including CEGH Gas Exchange of Wiener Börse Futures products

Xetra® FIX Gateway

Functional scope for Xetra Release 12.0

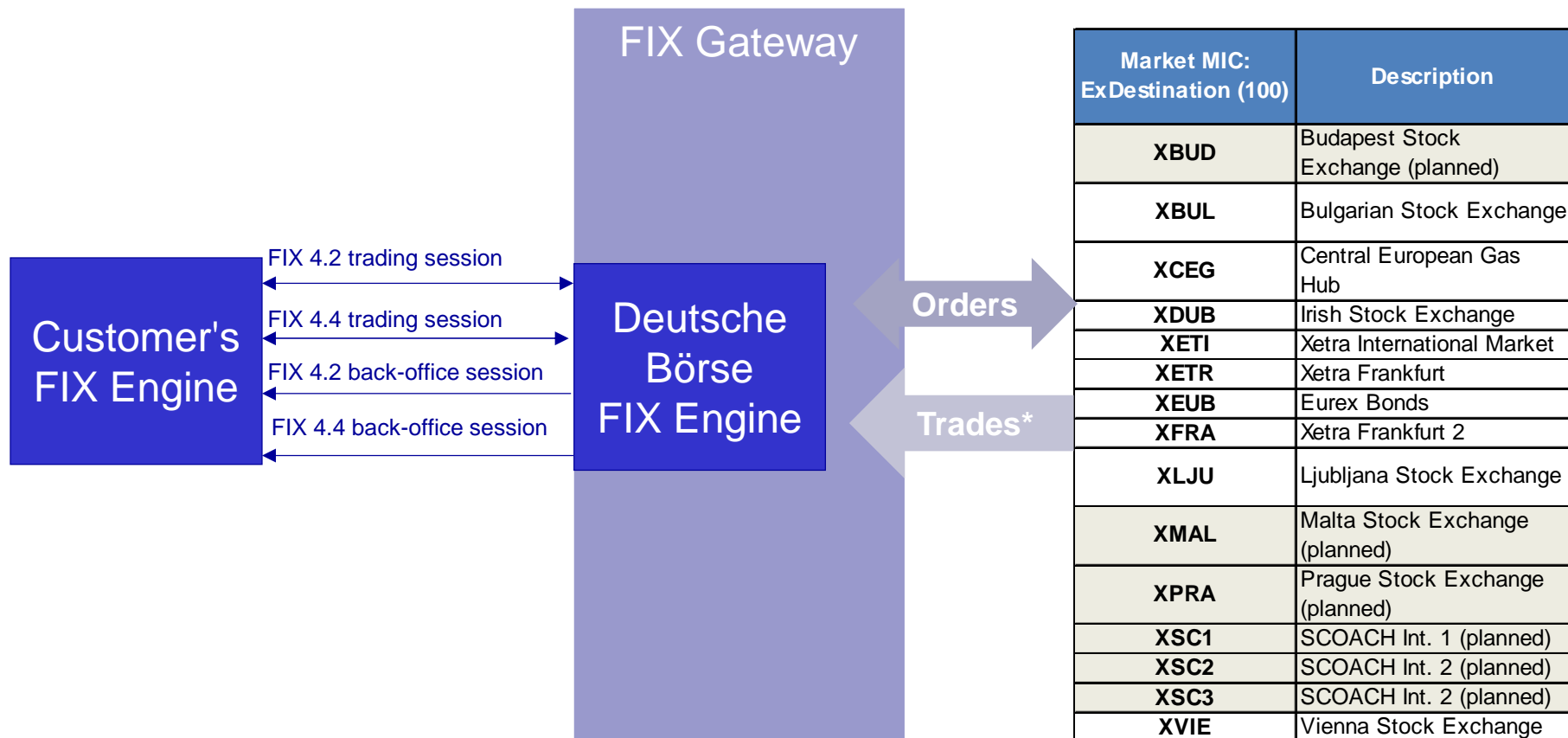
- n All Xetra trading models including Xetra BEST are supported.

- n Trade confirmations on member-level
 - n Trade Capture Report (AE)

- n Multi Exchange Capability
 - n Access multiple markets via a single FIX session
 - n Orders are routed to the respective market via MIC (Market Identifier Code) and ISIN or MIC and Isix (proprietary Xetra Instrument Identifier).

Xetra® FIX Gateway Multi Exchange Capability

n Access multiple Xetra® markets via a single FIX session.

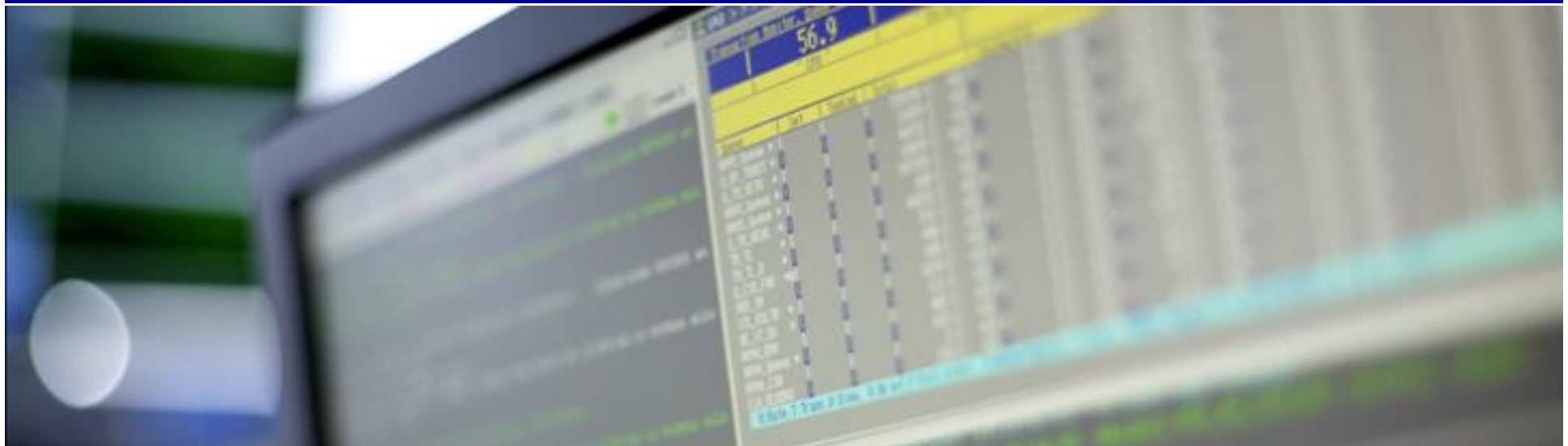


FIX Gateway Limitations

The following functionalities are currently not provided by the FIX Gateway:

- n Quoting functionality (à Enhanced Transaction Solution)
- n Mass order cancellation functionality
- n Market Data (à Market Data Interface)
- n Reference Data (à Enhanced Broadcast Solution, Reports)
- n Any trade management or clearing functionality (à FIXML Clearing API)
- n Over The Counter functionality
 - n Eurex[®]: no OTC trade entry (à FIXML Clearing API)
 - n Xetra[®]: no OTC trade entry (à Enhanced Transaction Solution)
 - n Eurex: no trade confirmation for OTC trades (à FIXML Clearing API)

Market Data Interface



Market Data Interface

Overview

- n A flexible, transparent interface which disseminates market information to members over a multicast network
- n Messaging protocol compliant to the FIX 5.0 SP 2 including extension packs
- n Conforms to the FAST (FIX Adapted for Streaming) protocol version 1.2 principles for efficient bandwidth utilisation
- n The interface provides members with information in the form of broadcast streams
- n The Eurex[®] Market Data Interface is supported in parallel to the existing Enhanced Broadcast Solution and the public market data dissemination over VALUES API

Market Data Interface

Technical characteristics

- n Efficient bandwidth utilization
 - n Eurex[®]: approx. 600 kbit/s
 - n Xetra[®]: approx. 250 kbit/s
- n Netting interval
 - n Eurex: 250ms for futures, up to 2 seconds for options
 - n Xetra: 0.5 seconds

Market Data Interface

Functional scope (1/2)

- n Ticker data
 - n External underlying price and index ticker information:
Market Data Incremental Refresh (X)

- n Market data
 - n Order book snapshots: Market Data Snapshot Full Refresh (W)
 - n Order book delta / incrementals: Market Data Incremental Refresh (X)
 - n Trade prices
 - Eurex[®]: last trade via order book snapshot
 - Xetra[®]: all trade prices via ATP data stream:
Market Data Incremental Refresh (X)

Market Data Interface

Functional scope (2/2)

- n Xetra Instrument state changes: Security Mass Status (CO)
- n Quote requests: Quote Request (R)
- n Cross requests: Cross Request (U21)

- n Note: the Market Data Interface will NOT provide reference data.

Market Data Interface

Market depth

- n Eurex[®]:
 - n Futures: up to ten order book levels
 - n Options: level 1 (top of book)

- n Xetra[®]:
 - n Continuous trading: up to five order book levels
 - n Continuous auction: level 1 (top of book)

Market Data Interface

Daily tasks

- n Get reference data
 - n from the reference data stream in Enhanced Broadcast Solution
 - n from Eurex[®] report RPTTA111
 - n from the instrument reference data file provided on the common report engine
 - n from the tradable instrument list on the Xetra website
- n Join desired streams
- n Process snapshot messages and build a local copy of the order book
- n Apply delta messages to the local copy of the order book

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Thank you for your attention!



Backup

FIX message design rules

- n The FIX Protocol Limited (FPL) recommendation is to use standard fields from higher versions instead of using user-defined fields.
- n Deutsche Börse has applied the following design rules to support functionality not currently provided in FIX 4.2 or 4.4:
 - n Fields reserved for internal use (tag numbers 10000 - 19999) are not used.
 - n Standard fields of FIX 4.2 or 4.4 that only became part of the standard message in a higher version are used.
 - n FIX fields of higher versions are only added to standard messages if no standard field for the required functionality is available in FIX 4.2 or 4.4.
 - n FIX 4.2 messages identify parties with flat fields and not by means of a repeating group. User-defined fields identifying parties have been added to all standard messages used in order to avoid the repeating group available as of FIX 4.3.

Backup

Connectivity options

Eurex Multi-Interface Channel		bandwidth options
<ul style="list-style-type: none"> § Enhanced Transaction Solution/ Enhanced Confirmation Solution § Eurex FIX Gateway Market Data Interface § FIXML Clearing API VALUES API 		<ul style="list-style-type: none"> 1 Mbit/s 1,5 Mbit/s (USA) 2 Mbit/s (Europe) 10 Mbit/s
Eurex FIX Channel		bandwidth options
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