



## **Ponton EFET Box 4.1**

EFET eCM 3.3

EFET ePM 1.1

## **USPs and Key Features**

**Ponton Consulting GmbH**

**October, 2010**



Powered by

**π PONTON**  
CONSULTING

WE ARE THE 2 IN B2B

## Content

1	Business Features .....	3
1.1	Complies with EFET Standards .....	3
1.2	Supports various Commodities and Transaction Types.....	3
1.3	Nearly 60 European Energy Traders are committed to EFETnet.....	3
1.4	Automatic Exchange of Trade Confirmations directly between Counterparties .....	4
1.5	Drastic Reduction of Total Integration Cost.....	4
1.6	Matching of Trade Details and Fees with Brokers Included .....	5
1.7	Automatic Confirmation Matching / Straight-through Processing .....	5
1.8	Near-Match Finder .....	5
1.9	Box Chat Function .....	5
1.10	Fax Support – Inbound and Outbound .....	6
1.11	Flexible Search Options for Trade Data, predefined Quick Searches .....	6
1.12	Cockpit View .....	6
1.13	Audit Trail Information .....	6
1.14	Reports in PDF and Excel Format.....	6
1.15	E-Mail Alerts for Matches, Timeouts and Errors.....	7
2	Technical Features.....	8
2.1	Flexible Back-end Interface.....	8
2.2	Highest Level of Security .....	9
2.3	Reliable Data Exchange .....	10
2.4	Easy Installation of the EFET Box Components .....	10
2.5	Supports a Variety of Hardware Platforms and Operating Systems .....	10
2.6	Supports a Variety of Database System .....	11
2.7	Pre-packaged DB schema with automatic DB<->XML mapping .....	11
3	Service Elements .....	12
3.1	Ponton’s EFETnet Help Desk .....	12
3.2	Online Project Information.....	12
3.3	Contact Details .....	12

# 1 Business Features

## 1.1 Complies with EFET Standards

### eCM – electronic Confirmation Matching

The EFET Box is the first eCM system that fully complies with all EFET standard releases – EFET eCM 3.0 up to eCM 3.3. Release 3.3 is available to EFETnet participants since 2008 and includes the confirmation of financial deals.

The EFET Box has been used in production since December 2004 by some of the most influential energy traders across Europe.

### ePM – electronic Position Matching

Automated periodic reconciliation of position data at summary (aggregated delivery profile) and detail (trade data) level. Live since November 2007.

### fCM – fax Confirmation Matching

Send standard eCM confirmations out of your ETRM system and convert them on the fly into faxes.

Receive faxes from your CP and match them with your own eCM confirmations. Manage rules for fax template selection and outbound routing. See the fCM flyer for further details.

## 1.2 Supports various Commodities and Transaction Types

The EFETnet Software supports deals for commodities in

- Physical power, gas and emission certificates
- Financials on power, coal, oil, fuels, metals, freight, agriculturals etc.
- All European markets (UK, NL, DE, FR, BE, CH, others)
- Base load, off-peak and peak load with delivery profiles
- Intra-day, day-ahead, forward trades
- Fixed-price and index-based pricing
- Options, fixed/float and float/float swaps and swaptions
- "Counterparty-only" deals, brokered deals (trilateral) and "broker-only" deals

And many other standard options as defined in the EFET eCM/ePM/eSM standards.

## 1.3 Nearly 60 European Energy Traders are committed to EFETnet

Around 60 trading organizations and brokers are either already using the EFETnet software in production or are committed to EFETnet.

Back in 2004, RWE and Electrabel were the first users of the EFET Box prototype. They were impressed by the ease of installation and the reliability in daily operation. Here are two quotes from the respective IT managers:

1. Dr. Dirk Mattig, EFET eCM project manager for RWE Trading's back office, on the EFET Box:
 

"We were able to install our eCM test system from scratch within less than an hour thanks to the ease of use of the software. Message exchange via email with our pilot partner worked on the first attempt.

Ponton Consulting's software also met RWE's very strict internal security requirements so that we were allowed to install it in the DMZ to achieve message exchange via HTTPS.

During an intensive test phase with three counterparties over several months the software proved to be stable, reliable and mature and hence RWE's Back Office approved its use in production environment.

We are very pleased with both the quality of the software and the professional support by Ponton Consulting during the entire project."

2. Ronny De Lafaille, application manager for Electrabel Trading and Portfolio Management, on the EFET Box:

"The implementation of the EFET eCM Project has been a major step forward in optimizing our Back Office processes, which will result in better service quality and less operational risk.

The EFET eCM BOX+, developed by Ponton Consulting, proved to be very user friendly and reliable during the test phase. Installation and configuration of the system was done in only a couple of hours and our first electronic matches followed quickly afterwards.

The professional support from Ponton has given us much confidence in the company and we are looking forward to further collaborate with Ponton to implement future versions of the eCM standard."

## 1.4 Automatic Exchange of Trade Confirmations directly between Counterparties

EFETnet is a network of directly connected systems for electronic confirmation matching. As its core component, the EFET Box is directly attached to the ETRM system of each participant and communicates with other EFET Boxes on the counterparties' side. This peer-to-peer communication is possible since with EFETnet all aspects of B2B interoperability have been standardised:

- Document formats: all electronic documents used in eCM and ePM adhere to a standardized XML schema and business rules
- Business processes: defines the order and timing in exchanging confirmation (eCM) and position (ePM) documents, match notifications, cancellations and amendments
- Communication protocols: all EFET standards achieve a secure and reliable data exchange by applying the open ebXML MS 2.0 standard.

This way, a central "marketplace" or hub operator is not needed. Thus all cost and the risk of having a single point of failure that usually relate to such a third party are avoided within the EFETnet community.

## 1.5 Drastic Reduction of Total Integration Cost

Traditionally software components are purchased from various different vendors by each trading party. This introduces high cost across the trader community since software functions get developed redundantly. More importantly, peer-to-peer communication with a mix of differing software components installed on the communication nodes leads to high cost in order to overcome interoperability issues during implementation and operation.

EFETnet B.V. is a central, industry-owned, neutral and not-for-profit body which fully avoids this "cost of diversity" without introducing monopolistic power. Through EFETnet B.V. costs of all participants such as development, maintenance, and support are shared. This leads to decreasing cost as the number of participants increases. Likewise, since all participants use the same software, interoperability problems are avoided. As EFETnet B.V. holds a perpetual licence to the software for the energy industry, the price-setting power cannot be abused.

Large trading organisation have kick-started the EFETnet consortium because their expected cost reduction is highest. Later on, as per-participant cost decreases, smaller trading organisations with less than 25 trades per day will also have an incentive to join, since cost are shared among 50 to 100 organisations in the future.

## 1.6 Matching of Trade Details and Fees with Brokers Included

The EFETnet community includes both traders and brokers. The EFET Box supports the confirmation matching process for brokers as introduced in version 3.1 of the EFET eCM standard. The EFET Box for brokers visualises the communication with both counterparties involved in a deal. Broker deal data is processed and matched including brokerage fees.

Depending on which parties involved in a deal are eCM-capable, electronic confirmations can be matched in any of these modes:

- Bilateral confirmation between two traders
- Bilateral confirmation between trader and broker (if the other trader is not eCM-enabled yet)
- Trilateral confirmation including both counterparties and the broker

## 1.7 Automatic Confirmation Matching / Straight-through Processing

The automatic eCM process is initiated as soon as a trade confirmation is received from the participant's ETRM system or from the counterparty. The actual matching process over the Internet only takes a few seconds. Thus more than 400 matches can be performed per hour – more than the daily number of deals closed by most of today's trading organisations.

Ponton tested EFET Box 4.0 / eCM 3.3 with more than one million trade confirmations in the system per counterparty while performance is still as high as 1.000 matches per hour on standard hardware equipment.

## 1.8 Near-Match Finder

Typically more than 95% of all trades confirmed via eCM are matched in a straight-through manner. Back-office staff only needs to handle the remaining 5%. The main reasons for non-matches are

- no counterparty confirmation was received yet
- there is a false data value on one of the two related confirmation documents

The EFET Box has a "near-match finder" function supporting back-office users in identifying the counterparty or broker confirmations most similar to their own unmatched confirmation. The set of candidate documents is first narrowed down in an overview list before comparing the most likely ones in detail. The graphical side-by-side comparison highlights all relevant differences that prevent the documents from matching.

Following the EFET standard, the mismatch has to be dealt with offline (e.g. by telephone or the box chat feature) after which one of the parties sends an amended confirmation which will then successfully match.

## 1.9 Box Chat Function

If a discrepancy in trade confirmations has been detected, back-office staff often face the problem of how to get through to the suitable contact of their counterparty. Ponton have integrated a context-sensitive chat function into the EFET Box. Clicking the chat button next to a confirmation entry in the user interface establishes a secure conversation channel to the EFET Box of the counterparty. Context information about the deal at hand is transmitted so that your counterparty can immediately access the documents from within the conversation window (deal information, near match information). Conversations are stored along with the audit information and can be resumed or joined by other back office members at any time.

## 1.10 Fax Support – Inbound and Outbound

Ponton has developed a solution to transform eCM 3.3 confirmations into PDF or TIFF format that can be faxed to counterparties who are not integrated by means of the eCM process. All processing steps are tracked and logged in the audit trail.

For the incoming direction TIFF files from fax counterparties can be OCR-scanned by a third-party solution and transformed into a Fax XML format that is matched against the own eCM confirmations. Again, all processing steps are audit trailed and can be monitored by back-office staff.

Fax processing is well-integrated with the eCM process used for the broker connection such that both fax and eCM dialogue can interleave within the same overall process.

## 1.11 Flexible Search Options for Trade Data, predefined Quick Searches

For back office users the most common activity is to search the EFET Box database for confirmations that need their attention such as

- unmatched confirmations of the past 1-2 days that are going to time-out soon
- deals that are not yet matched but where energy will be delivered quite soon (e.g. intra-day trades)

The EFET Box features a range of search options to drill down into all details of the deal data including the transmission log of individual documents and all security related aspects such as signing and encryption.

## 1.12 Cockpit View

The Cockpit View is a high-level status overview of all deals submitted to eCM for matching. Deals in this expandable matrix can be arranged by markets, counterparty, product type and transaction type in any preferred order. Traffic light colour coding quickly guides users to deals which need their attention:

- RED means "action required" – this category contains deals which have timed out or failed due to invalid data or transmission problems.
- YELLOW means "in progress" – this category contains deals waiting to be matched with special highlighting of deals which are going to time out soon.
- GREEN means "matched"

## 1.13 Audit Trail Information

The exchange of confirmation and position documents between counterparties as well as the matching process is logged in the EFET Box database at a high level of detail.

All electronic documents, transmission data, electronic signatures and certificates are archived in the file system and can be retrieved at any time via the user interface of the EFETnet software.

Configuration changes in the software are captured in a separate audit log.

## 1.14 Reports in PDF and Excel Format

The following standard reports are available as a part of the Box:

- *Broker Fee Report* to aggregate fees payable to brokers for a given period

- *Cockpit View Report* for an overview of trade confirmations in the system and their status, broken down by counterparty, commodity, transaction type and market.
- *Search result reports* listing business documents in the system and their status based on user-defined search criteria. Reports on all document types are available in PDF format. Trade confirmation overviews are also exportable to Excel for further processing.
- *Filter conditions* used in search reports can be stored individually by EFET Box users and be re-used in reporting.

### 1.15 E-Mail Alerts for Matches, Timeouts and Errors

Every business event or technical event within the EFETnet software can be used as a trigger for email alerts to back-office users and/or IT administrators such as

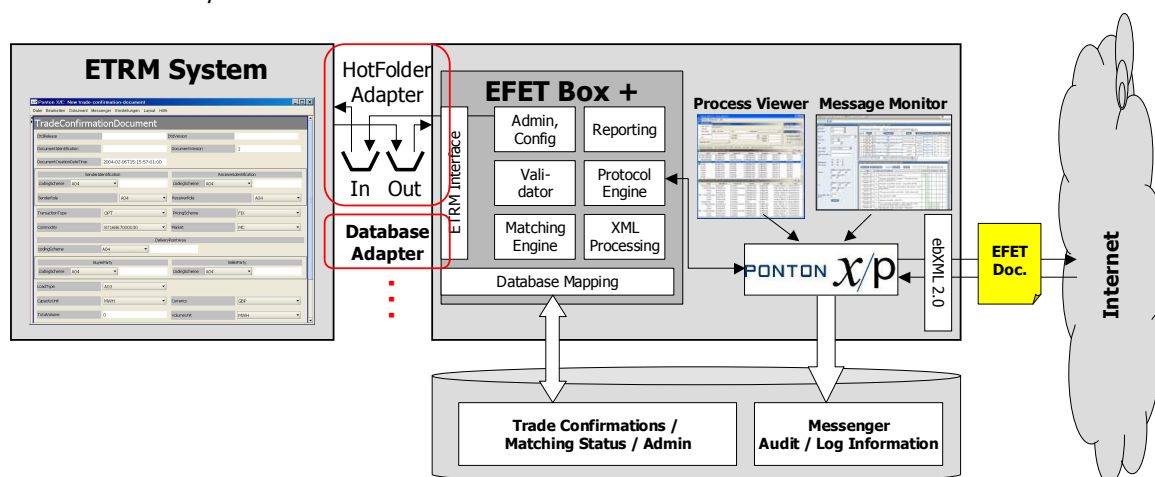
- Matching of two confirmations or position documents
- Time-out of a confirmation
- Failures during matching
- Document transmission failures, such as connection errors, certificate verification error, XML validation errors, acknowledgement failures, decryption failures, compression / decompression failures, communication time-outs and unsynchronised clock times etc.
- Software and infrastructure failures

Further technical details can be found in the Ponton X/P and EFET Box manuals.

## 2 Technical Features

EFETnet users install the following components:

- The **Ponton X/P** ebXML Message Service is used for secure and reliable exchange of documents.
- The **EFET Box** is used for eCM/ePM-specific functions such as matching, workflow coordination, and document retrieval.
- **Ponton X/D** is an optional backend integration component transforming database contents to the standardized electronic documents in XML format and vice versa. If the ETRM system has alternative XML import/export facilities it can be integrated with the EFET Box without using Ponton X/D.



### 2.1 Flexible Back-end Interface

The EFET Box can be integrated with the back-end (ETRM) system in the following ways:

- Hot-Folder Adapter
- Database Adapter (Ponton X/D)
- Web Service Interface
- Custom-made adapters (Adapter API)
- Third party adapters made by trading system vendors

The hot-folder interface is the simplest option: the EFET Box exposes three file system folders to the trading (ETRM) system:

- "outbox" – the ETRM system places documents to be processed by the EFET Box here, e.g. electronic trade confirmations, position documents and cancellation messages
- "inbox" – for feedback messages from the EFET Box to the ETRM system, so-called "box results" which report back the processing status of any document handed to the EFET Box such as "matched", "pending", "timed-out" etc.



## 2.2 Highest Level of Security

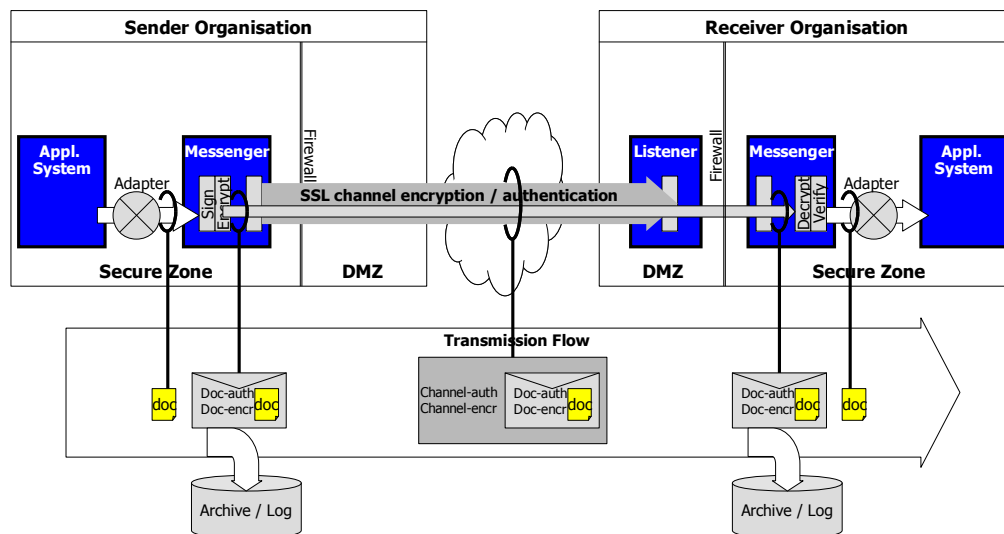
B2B Integration aims at connecting two application systems from different organisations. In terms of security, this requires

- Bridging firewalls without compromising security policies
- Authentication of documents received from the counterparty
- Prevention of eavesdropping, masquerade and “man-in the middle” attacks
- Ensuring document consistency
- Prevent counterparts to deny actions, non-actions and document transfers (“non-repudiation”)

To achieve a security level that addresses all these requirements, the following options exist:

- **SSL channel encryption:** This helps prevent third parties from accessing the exchanged data. SSL encryption only applies to the transfer of data between the Messenger as the sender and a component in the receiver’s DMZ, called the Listener.
- **SSL server authentication** helps the sender in assessing that the receiver really is who is intended as the receiver and not a third party masquerading as such. This is done by using the receiver’s certificate to verify its public key.
- **SSL client authentication** helps the receiver to authenticate the sender. Here, the public key certificate of the sender is stored on the receiver’s side to identify the sender.
- **Document encryption.** Since channel encryption only works for the IP socket connection between Messenger and Listener, additional encryption is used at the application level. This assures the communication of encrypted documents between the two Messengers, i.e., between the two secure zones of the communicating parties.
- **Document authentication.** Channel encryption does not provide a persistent electronic signature that can be stored on the sender and receiver side. For this reason, the Messenger creates an additional PKCS#7 signature that is attached to the transferred document and stored on both sides together with the signed payload document in the file system. Certificates of the sender and of the CA root are stored as well such that signatures can be verified by the sender and receiver at any time.
- **Use of signed Acknowledgements.** Within EFETnet, each transfer of a business document is confirmed by a signed acknowledgement. This prevents the receiver of the business document to repudiate reception. Since the business document is signed itself, neither the sender can repudiate having sent it.

The different steps of a business document transfer are illustrated in the following figure:



### 2.3 Reliable Data Exchange

Apart from data security it is important to implement a reliable document transfer. At first sight it might be easier to agree on “using http or SMTP” as the communication protocol instead of a more complex protocol built on top of these communication layers. Although integration might appear simpler at first, these options lack vital security and reliability characteristics.

The EFET standards require using the ebXML standard as the common EFETnet communication infrastructure, supporting a sophisticated system of confirmations, acknowledgements and synchronised transmission behaviours for all participants to ensure that either a document has been completely transferred “end-to-end” or a failure will be reported. Standardized timeout and resend features help bridging short-term network issues transparently.

Ponton X/P, the messaging component of the EFETnet software, fully implements the ebXML messaging standard.

### 2.4 Easy Installation of the EFET Box Components

The EFETnet software is delivered as a shrink-wrapped product that can be directly installed using a standard installation wizard. Installation procedures are documented in detail such that a step-by-step procedure can also be applied. Over 200 pages of installation and user manuals are available to support more sophisticated set-up features.

### 2.5 Supports a Variety of Hardware Platforms and Operating Systems

All EFETnet software components are programmed in the Java programming language to achieve hardware and operating system independence. Accordingly, the Messenger software has been installed on systems such diverse as Windows 2000-2008, XP, Vista and Windows 7, Linux (Red Hat, SuSE, Debian, others), Sun Solaris, HP UX, and IBM AIX.

**Note:** The EFET Box has not been tested and certified by Ponton for all OS systems it may work with. Please check our recommendation in the systems requirements document that can be obtained from the EFETnet Community Website.

## 2.6 Supports a Variety of Database System

The EFETnet Software is shipped with a pre-packaged embedded database system (Apache Derby) such that the software can be evaluated without the overhead of setting up an Enterprise grade database.

For production purposes the EFETnet software supports the following DBMS: Oracle, Microsoft SQL Server and MySQL.

## 2.7 Pre-packaged DB schema with automatic DB<>XML mapping

The Database Adaptor (Ponton X/D) transforms XML documents into database records and vice versa. Conversion rules for mapping between standard-compliant eCM documents and a pre-defined database schema are available at no extra cost.

This reduces your integration effort to implementing the data transformation between your trading system database and the pre-defined interface tables. This drastically reduces the overall integration effort since no familiarity with XML technology, Java or the involved communication protocols is required at your site.

### 3 Service Elements

Ponton has many years of experience with message-based B2B integration . , from . Five years of supporting a large number of heterogeneous sites have led to valuable experience.

#### 3.1 Ponton's EFETnet Help Desk

Ponton's support centre is located in Hamburg in the ME(S)T time zone. The office hours are 09:00 – 18:00 German local time.

Dedicated EFETnet support services are available

by phone: +49 40 69 213 339

or email: [efetnet-helpdesk@ponton-consulting.de](mailto:efetnet-helpdesk@ponton-consulting.de)

#### 3.2 Online Project Information

Visit the EFETnet website at [www.efetnet.org](http://www.efetnet.org) for

- Documentation relating to the EFET standard and the EFET Box products
- Contact details of EFETnet participants
- An online software demonstration of the EFET Box
- Information about EFETnet events and organisations

EFETnet members have access to the EFETnet Community Services at [community.efetnet.org](http://community.efetnet.org):

- Latest EFETnet software downloads
- A comprehensive document library including standard documents and manuals for end users, integrators and administrators
- Event and news service
- Forum service (for discussions and announcements)
- Knowledge base: technical support information for EFET Box users
- Central database for static data (such as shared product and hub codes), contact information of participants, live status of participants.

#### 3.3 Contact Details

Ponton Consulting GmbH  
Dorotheenstr. 60  
22301 Hamburg

Tel.: +49 40 69 213 340

Fax.: +49 40 69 213 355

Web: [www.ponton-consulting.com](http://www.ponton-consulting.com)

Tilo Zimmermann

Tel.: +49 40 69 213 342

Email: [zimmermann@ponton-consulting.de](mailto:zimmermann@ponton-consulting.de)

EFETnet Helpdesk:

Email: [support@efetnet.org](mailto:support@efetnet.org)