Smart Scale Energy Solutions Connectivity & Integration

Simplify cost allocation by linking energy costs

Energy costs represent a growing proportion of the total cost of industrial production. Therefore the number of energy applications and energy relevant measurement and data is steadily growing. At the same time system landscapes are becoming more and more heterogeneous and integration of energy data into higher level systems are required to set consumption data in relation to costs.

The Challenge A robust and versatile integration platform is necessary to fulfill these requirements. Classic file interfaces don't offer this flexibility or ensure the traceability of the data flow.

The Solution With the BPI Middleware, Endress+Hauser is offering a software component that was designed and built to fulfill all the requirements of a system integration process. It guarantees a high level of stability, flexibility and transparency.

Necessity to integrate energy data

To optimize the energy consumption it is necessary to know where the energy is used. In industry the typical energy consuming applications are:

- Steam systems
- Compressed air systems
- Heating systems
- Cooling systems
- Electrical consumers such as production areas, motors or assets.

To evaluate the efficiency of these systems it is necessary to measure and calculate energy relevant performance indicators. This is the base to optimize performance and consumption of systems and consumers.

Based on this information the next step is often to assign the energy costs to the company specific costs or cost centers. At this stage energy relevant data have to be linked with ERP systems or production systems.
This is important to:

- Prevent losses and increase operational efficiency by enabling proactive management,

Benefits

The BPI Middleware helps to link energy consumption data with costs by:

- Seamlessly integration into the existing system landscape.
- Having more than 100 components to communicate with other systems.
- Supporting every major communication standard such as Web services, FTP, file transfers, SQL, e-mail, LDAP, JMS, SAP RFC and many more.
- Supporting data formats such as XML, CSV, EDIFACT and XLS, among others.
- Transformation of data via Java, XSLT or one of many scripting languages.

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People for Process Automation

- Reduce energy costs by providing visibility into energy-usage data across multiple systems and sites,
- Optimize the Energy portfolio according to demand and/or procure energy from sustainable sources,
- Deliver transparent, timely, and effective sustainability reporting to both regulatory and voluntary organizations (e.g. Carbon Disclosure Project, Global Reporting Initiative),
- Data mining, Analytics and Benchmarking.

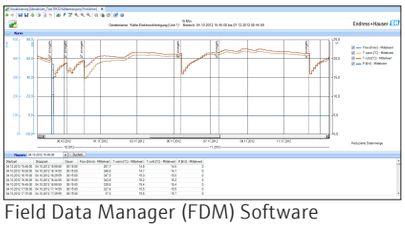
Interaction with existing system landscapes To realize the data link Middleware applications are quite common in business IT, especially with ERP systems like SAP or production systems. The BPI Middleware integrates itself seamlessly into the existing system landscape and communicates with the different Endress+Hauser energy relevant applications.

The BPI Middleware has more than 100 components for communicating with other systems, and it supports every major communication standard such as Web services, FTP, file transfers, SQL, e-mail, LDAP, JMS, SAP RFC and many more.

What is true for communication channels also applies to data formats and transformation (mapping).

Our BPI Middleware also supports XML, CSV, EDIFACT and XLS, among others. Transformation of data can be done via Java, XSLT or one of many scripting languages.

The Field Data Manager (FDM) Software and the Energy Software eSight are able to communicate with Middleware and deliver the following energy relevant system and performance values:
- Instantaneous values
- Mean values
- Minimal values
- Maximal values


Field Data Manager (FDM) Software

Easy Configuration The integration logic is stored as so-called routes inside the BPI Middleware. Settings that must be configured on-site, such as server addresses or file paths, can be changed conveniently via the webbased user interface.

Stability As a central data hub, the BPI Middleware can process a massive number of messages. This requires high performance from the system, but in case of a system crash, it will not lead to a loss or corruption of data. Thanks to mature, often-used techniques, the BPI Middleware ensures that the system load can be handled and that operation is fail safe.

Key Features:

Connectivity
- Web services: SOAP - REST
- Networking: HTTP – HTTPS - FTP – SFTP - FTPS
- E-mail: POP3 – IMAP – SMTP
- Databases: SQL - JPA
- Messaging server: JMS Active MQ
- SAP: RFC - BAPI – IDoc
- Plant access: OPC UA

Security
- Authentication required via username and password
- HTTP Basic Authentication
- WS-Security
- SSL encryption
- JAAS

Simplified Operation
- Internet browser-based access
- Embedded backup- and restore functionalities
- Runs as a Windows service in the background

Supported Operating Systems
- Microsoft® Windows 2008 R2
- Microsoft® Windows 2003 Server
- Microsoft® Windows 7
- Microsoft® Windows XP

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