

NEWS

*Special Edition
for SAP Users*

February 2008

MPDV Mikrolab GmbH: innovative MES-Solutions for effective management of production, personnel and quality

Adaptive Manufacturing with SAP applications and xMES

Having introduced the new xPCC Process Communication Controller as its first MII certified MES component in December 2007, long-time SAP partner MPDV now announces



a further product highlight. As of February 2008, the

new product family xMES now provides SAP users with a broad range of MES functions based on SAP AG's MII Composite Application, offering complete integration into the

SAP Certified Integration

SAP® xApps™ CERTIFIED

POWERED BY
SAP NetWeaver®



NetWeaver infrastructure. MPDV has acquired broad SAP know-how through its extensive collaboration with SAP AG and SAP users, as well as through the experience it has gained from over

500 MES projects.

xMES enables MPDV to efficiently close the gap between

the administrative systems level (ERP, QM, SCM, etc.) and the shop floor level. xMES ensures smooth data flow between production facilities and SAP applications. If required, it also provides real-time information on production data in SAP dashboards. MPDV thus supports the strategy of Adaptive Manufacturing. Specifically, it helps employees working in production-related environments respond to bottlenecks, order delays and other problems within the production process.

Moreover, xMES provides necessary data for significant KPIs (Key Performance Indicators) such as OEE (Overall Equipment Effectiveness), in order to establish a basis for users to make the right decisions and to take actions necessary to achieve on-going improvement of production processes.

HIGHLIGHTS

Manufacturing Integration and Intelligence with xMES

MII and xMES: perfect shop floor integration

MII and xMES: real-time visualizations



Manufacturing Integration and Intelligence with xMES

The new xMES has been designed to complement MII with applications in the areas of Manufacturing Integration and Manufacturing Intelligence, needed by manufacturing companies to improve their

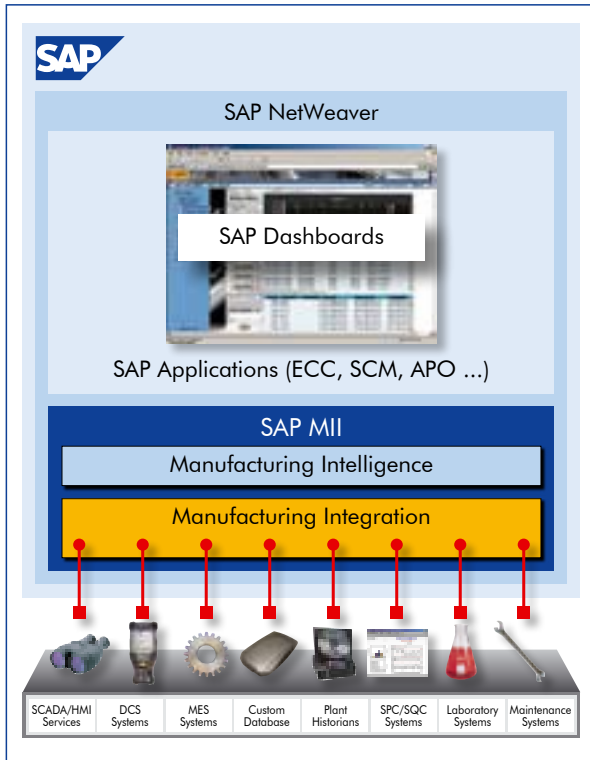
This guarantees that only those functions that are actually needed are activated while enhancements are possible at any time.

The xDIC "Data Input and Communication" module provides relevant functions for collection of production data as well as for communication with machines and other production components. In turn, xDIC is comprised of two program packages: xPCC "Process Communication Controller" and xDAS "Data Acquisition Services". xPCC "Process Communication Controller" is used for direct and automated data exchange with machines.

xDAS "Data Acquisition Services" is used for manual data collection via PCs or special

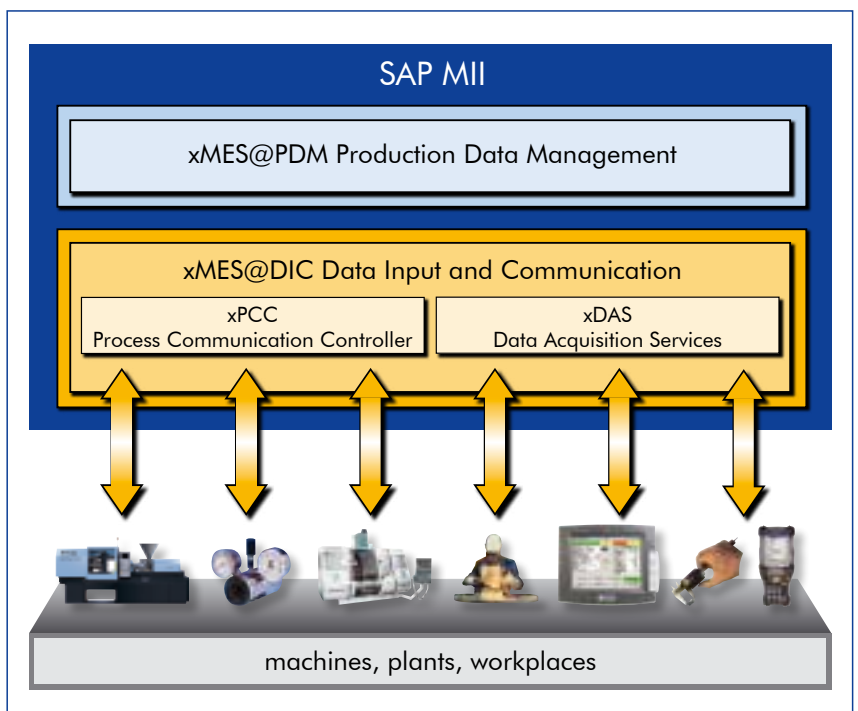
terminals. The xMES module xPDM "Production Data Management" is synonymous with "Manufacturing Intelligence". xPDM provides a number of functions developed to complement SAP applications, particularly with respect to real-time visualization in SAP dashboards.

To achieve the urgently needed synchronization of a company's business processes and master data with its production processes, as well as to be able to work on a consistent data basis, xMES uses BAPIs, RFCs and IDOCs specified by MII as a remote-capable function within a standard or customer-specific characteristic.



information flow, increase productivity and improve their processes.

xMES consists of various functional modules that can be used in nearly any combination, depending on given requirements. During the design process of the system, users can decide whether their requirements are met by Core Components or if they have to be augmented by Extension Components that can be activated as an option.



MII and xMES: Perfect Shop Floor Integration

The benefits and acceptance of production-related systems depend on their user-friendliness to workers. As a result, strong



emphasis was placed on ergonomics and a safe navigation through the user interface when data input dialogs were designed.

Depending on requirements and environmental conditions, individually configurable dialogs are available for common PCs, industrial PCs or terminals.

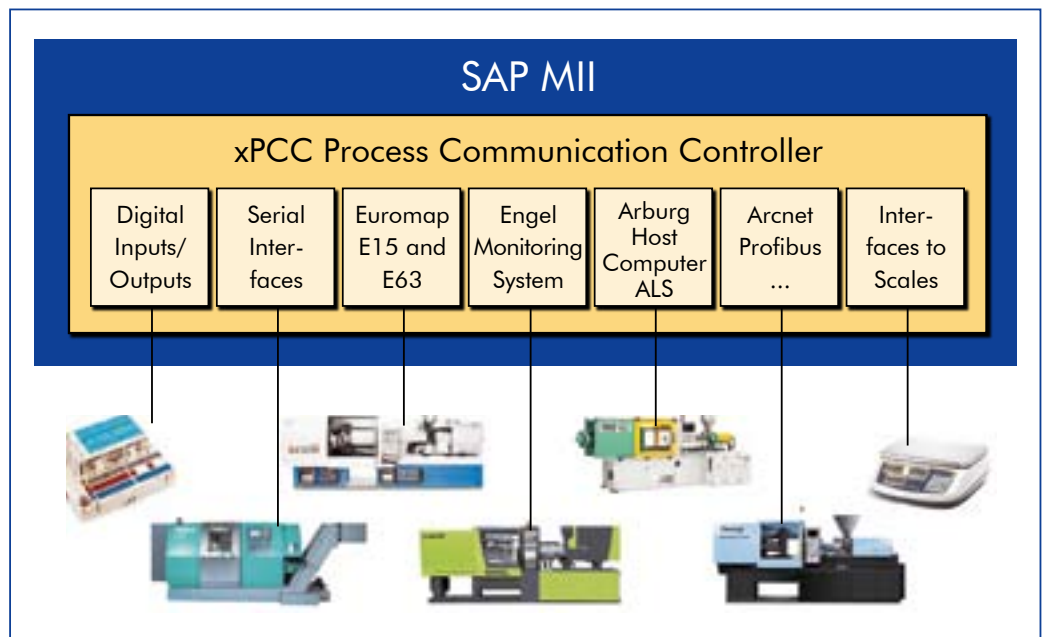
In terms of saving time and increasing reliability, taking data directly from the controls of machines and plants results in a significant reduction in complexity and effort spent for the manual data collection. For

this reason, MPDV has developed the multi-talented, xPCC "Process Communication Controller", which has been certified by SAP as the first Composite Application for MII by a European partner. Through xPCC

data interfaces, it is possible to connect the most diversified types of machines to SAP applications via MII and to establish bi-directional data exchange. The benefits are obvious: machine and process data can be recorded directly at machines and plants or taken from their controls so that they can be processed and visualized in MII or forwarded directly to SAP applications in real-time. Furthermore, setting parameters and NC data records can be directly transferred to the controls.

xPCC provides an extensive library of proprietary or standardized interfaces and protocol modules. They include the Euromap interfaces E15 and E63, commonly used in the plastics industry to connect machines by **Netstal**, **Battenfeld**, **Engel**, **Krauss-**

Maffei and **Demag**. Others include interfaces to the **Arburg-Leitsystem (ALS)** and the **Engel Monitoring System (EMS)**. In addition to other connections, for metal-working companies, xPCC provides interfaces to NC machines by **Index**, **Deckel Maho**, **Spinner**, **Gildemeister** and **Takisawa**, to name just a few. Interfaces to scales by **Mettler Toledo**, **Bizerba**, **Sartorius**, etc. allow for direct upload of weight values. In addition, xPCC can also communicate with machines and plants equipped with common machine controls (SPS) and peripheral assemblies by **Bosch**, **Fanuc**, **Philips**, **Siemens**, **Panasonic**, **Beckhoff** and **WAGO** as well as via industrial bus systems such as **Arcnet** and **Profibus**.



MII and xMES: Real-time Visualization

The SAP MII application for real-time analysis collects and processes data recorded manually by production workers or uploaded automatically from machines. By using MII functions for alerts, current overviews and evaluations,



the xMES module xPDM "Production Data Management" provides the user with all relevant information necessary for decision-making. Production workers as well as management have direct access to all important data via dashboards and are able to make quick and informed decisions.

xPDM offers standardized functions to calculate and visualize production data that can be directly used after customizing. Functions include:

- Differentiated booking of downtimes, setup times and production times of machines and plants to resource performance accounts and disturbance classes

- Real-time overview of operations and order progress for multi-level production orders
- Current overview of machine conditions
- Dashboards for clocked machines, including display of target performance (cycles or strokes) and deviation in percent
- Detailed order information
- Order shift logs and foreman checklists
- Flexible downtime analysis and computation of capacity utilization
- Machine status logs
- Efficiency reports based on quantities and time for all machines as well as flexible periods and shifts
- Calculation of OEE (Overall Equipment Effectiveness)
- Graphic display of resource performance accounts and associated booked times
- Graphic display of actual machine cycles.

The performance indicators displayed on dashboards

may be configured based on a company's requirements. As a result of automatic display of alerts, employees can proac-



tively be advised of critical situations within the production process in a timely manner.

The additional option of comparing plants and sites allocated in a specific geographical area enables production companies to review approved processes through benchmarking. It allows them to improve the added value of plants as well as the overall economic performance of employees, production workers and processes.

