

Industry: Automotive

Valmet Automotive

www.valmet-automotive.com



Picture 1 Valmet Automotive, Uusikaupunki plant

Wonderware MES, Operations and Performance - Car factory MES project in three months

Objectives

- Bi-directional data transfer between automation and ERP systems
- Electronic documentation of production
- Bill of materials (BOM) management
- Traceability of materials and endproducts
- Product quality management

Challenges

- The shortest possible implementation time
- Systems integration
- Ease of use

Solutions

- Wonderware InTouch HMI
- Wonderware System Platform
- Wonderware Operations
- Wonderware Supply Chain Connector

Results

- Modular and easily modified system that is integrated with other systems in the car factory
- Flexible management of production data and BOMs
- Web based reporting helps publishing the chosen data both internally and to interested parties

Valmet Automotive implemented a MES project with Wonderware Operations and Performance suite in summer 2009, covering their Garia Production. With the new solution, flexibility of production and change management could be strengthened, in response to the challenges presented by the fast change in the market. The whole MES project of the car factory was completed in three months, using the Wonderware Operations and Performance program suite.

Valmet Automotive produces design and manufacturing services for the car industry. The factory aims for flexible production, in order to start new products in record time and produce them flexibly for demanding customers around the world.

Valmet Automotive has responded to change in the automotive market by renewing its service offering. In November 2008, Valmet Automotive won a contract with the American Fisker Automotive to manufacture and develop the Fisker Karma hybrid in Finland. In January 2009, an agreement was reached with the Danish Garia A/S to design and produce a luxury class golf car. In August 2009, Valmet Automotive and Norwegian Think Global AS signed a letter of intent that will make Valmet Automotive a partner in designing and manufacturing the Think City electric car. The production of the golf car and Think City began in December 2009. The first Fisker Karmas will be delivered in the end of 2010.

Valmet Automotive has produced more than 220.000 Porsche Boxster and Porsche Cayman sports cars since 1997; altogether more than 360.000 convertibles have been manufactured.

Valmet Automotive serves the international automotive industry by offering services that comply to customers' wishes and demands. The advanced automation of the production and the production data management are important parts of Valmet Automotive's customer service and competition advantage.

The production automation system of the plant controls the production departments (welding, painting, assembly). It is firmly bundled to the factory's ERP information system that coordinates customer orders, materials purchases and production, as well as offers reports for internal use, for customers and for partner organisations.

Valmet Automotive and Wonderware MES

Valmet Automotive has used Wonderware automation programs in their production automation since the mid-1990's. Wonderware management and database programs connect flexibly to automation devices from different suppliers, creating an easily managed and reportable unit.

When Valmet Automotive started co-operation with new customers in early 2008, production management needed upgrading to a new, more flexible and transparent approach - the answer to this new challenge was to acquire and implement a MES solution.

Valmet Automotives MES solution comprises of Wonderware Operations and Performance MES programs (System Platform, Operations, Supply Chain Connector and InTouch suites). The advantages of the Wonderware solution are seen as follows:

- Easily connected to automation and IT solutions from different manufacturers
- Bi-directional data transfer between the automation and ERP systems
- Production data acquisition and presentation, ready-made reporting tools
- Configurable and fully compatible program packages with good basic functionality, easily enhanced to complete the project within schedule
- Broad program suite allows enhancement of operation at a later date



Picture 2. Valmet Automotive, Uusikaupunki plant

Wonderware MES solution for Valmet Automotive production was completed in three months in summer 2009. The fast project development and implementation of the MES solution assisted Valmet Automotive in its efforts to adjust production processes to the changed markets and customer needs.



Picture 3 Valmet Automotive (Uusikaupunki). MES solution configuration

Wonderware MES connects Microsoft Navision ERP and line automation

The clients Microsoft Navision based ERP system handles customer orders. Systems by V-A Logistics take care of materials purchases, deliveries and invoicing. Production management is done by MES.

Wonderware Operations and Performance MES connects to production management systems and control solutions of the different production lines. The system receives production orders from the ERP system according to customer demand, divides the orders to components for purchase and production and, processes each customer order through the whole manufacturing process. The MES system updates the status of each order back to the ERP system, providing real time order tracking. Wonderware Operations and Performance also handles material tracking for production and prints out labels for dispatch.

Line operations workstations on each production line supervise and report the operation of each subprocess with Wonderware InTouch HMI/SCADA (commencing, quality control, assembly and dispatch.)

Wonderware Operations and Performance MES brings clear advantages to the production environment.

With Wonderware Operations and Performance, Valmet Automotive has got numerous new functions at its disposal, that enhance production:

- Wonderware Operations and Performance manages electric communication with both ERP and production systems, and automation components from different manufacturers, integrating the systems into one easily administered unit.
- MES provides for centralized BOM management for flexible production - when products and models change, alterations can be made promptly.
- Tracing of materials and endproducts.
- Electronic, automatic and manual entries (assembly points, quality inspections, etc.)
- Browser based reporting that allows appropriate data to be published to those who need them.
- The system is easily modified when new requirements arise.

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Wonderware MES-software

Package solutions from the market leader

Operations

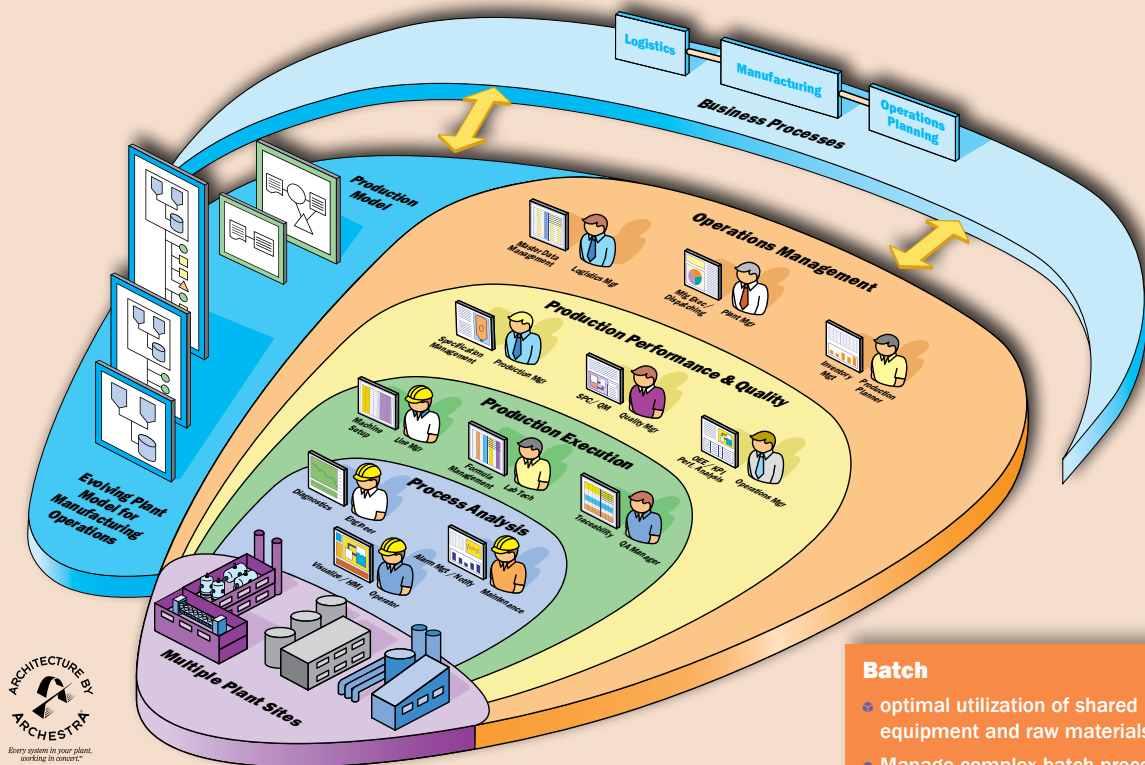
- Improved inventory velocity
- Reduced production order lead time
- Reduced time-to-volume for new product introductions
- Improved compliance and governance
- Improved predictability of order fulfillment

Performance

- Reduced capital expenditures
- Improved asset utilization
- Increases the capacity of your existing assets
- Leverages best practices

Enterprise Integration

- Improved production throughput and on-time delivery
- Increased visibility and responsiveness
- Dispatch information and local production work orders
- Adopt industry standards like ISA-95



Batch

- optimal utilization of shared equipment and raw materials
- Manage complex batch processes more effectively
- Reduce lifecycle engineering efforts using simplified control code according to S88 industry standards

Quality

- Minimize costly scrap and rework
- Reduce the safety margin
- Perform corrective and preventive actions
- Relate production and process quality

Wonderware System Platform

- Achieve your business goals without abandoning prior investments
- Reduce the effort and costs in building standardized applications for MES and EMI
- Improve production processes
- IT platform that offers complete scalability
- Open and distributed environment for integration capabilities

Mobile Workforce & Decision Support System – IntelTrac

- Accelerates and sustains operational process improvements
- A key component of an effective Operations Management System
- Inspection and regulatory procedures, assign, schedule and execute rounds and report back
- Modules to deliver best practices and collect data to ensure goals



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