

MES PATRIOT[®] FIELDS OF USE IN MANUFACTURING

MES PATRIOT[®]

is a production information system for efficient production management. With the use of its functions PATRIOT covers all needs within a company comprehensively.

Production planning

Automatic import of data from various ERP systems is used as input information for production planning. Based on this data MES PATRIOT provides functionalities for capacity planning according to the MRP II methodology including technological and shop floor preparation. The focus of the production planning activities is the continuous operational planning and rescheduling of production based on daily changes. The system has an excellent ergonomics and allows these tasks to be carried out intuitively so that planning experts can concentrate fully on the issue of creating optimal production consecution.

Production tracking

The module at hand administers an overview of the current status of ongoing production, the fulfilment of the plan of produced and delivered products and provides for each completed piece an overview of the input components and process parameters of its production. It can provide an overview of the current progress, the fulfilment and quantitative requirements according to the production specification and control and record the fulfilment of qualitative requirements. For small batch production the tracking can record the history of the product from the customer's specification of the requirements through the fulfilment of the requirements during production to the warranty and post-warranty service records.

Production rationalization

The production rationalization ensures the efficiency of the production process by introducing appropriate technical measures and modern means of controlling the production process. It involves monitoring the utilisation of machines and their key parameters, and also monitoring of energy consumption in production centres. The results obtained can be compared with each other in case analyses and provide incentives for improvement.

Maintenance management

This module applies modern requirements of the theory of restoration using the maximum possible degree of automation. Maintenance management system works with production means; like e. g. cyber-physical systems. All functionalities of the maintenance management information system are designed with a high degree of ergonomics. The system supports predictive maintenance using advanced data analysis methods to obtain the optimal ratio of downtime, costs and trouble-free operation.

MES PATRIOT® - Component and modules overview

The MES PATRIOT production information system is modular and therefore easily scalable. It is possible to deploy it gradually and its modules can work independently. It can be integrated with existing enterprise information systems. The list of modules:

Production planning: PowerPlan

- » Technical and workshop preparation
- » Capacity planning of production in accordance to MRP II
- » Operational planning with overlap into APS

Production monitoring

- » Production traceability: forward and backward
- » Data collection from the production process
 - Tracking of input parts
 - Tracking of process parameters
 - Write-off supervision
 - Product analysis and process failure evaluation
- » Production visualisation
- » Production genealogy
- » Production rationalization
 - Tracking of fail-states in production
 - Inner logistics tracking and management
 - Continual evaluation of production parameters
 - Fast Reaction System (FRS)
- » Module Standards (acquisition and optimization of time standards)
- » Module Electricity consumption monitoring

Maintenance management

- » Maintenance organization
 - Post-fault
 - Preventive
 - Diagnostic and predictive maintenance
 - Manual maintenance warehouse
 - TPM organization
 - SCADA: recorded data from machines
- » Maintenance optimization in terms of cost, time and use of human resources
 - Maintenance schedule and interval optimization (according to the Weibull analysis)
 - Operating an intelligence database

Monitoring of manufacturing centres

- » Monitoring of runs of production means, machines and equipment
 - Workloads and Downtime markers (KPI and OEE)
 - Current energy consumption
 - Connection to the maintenance management system for tracking the operation hours and workload
- » Energetics dispatch
 - Tracking the production centre supplies
 - Management of contracted energy consumption
 - The energy balance
 - Ensuring electricity backup
 - Monitoring the electrical power quality

Shared equipment and services of MES PATRIOT

- » User analyses and reports
- » Infrastructure
- » Pilot projects
- » Implementation and support