OTOMES
MES for Steel Industry

Production Management Intelligence

OTOMES is a highly flexible and modular «MES» (Manufacturing Execution System) addressed specifically to the steel industry and in particular for the Tube and Pipe business. OTOMES manages all typical processes of the steel industry without skipping any hidden aspects of production. All the necessary tools to drive production, manage quality, assets, production capacity and to extract and to show key performance indicators are harmonized together.
Effectiveness of a MES tailored to the Steel Industry

OTOMES is an extremely modular system that can manage various production areas. The CORE application alone can achieve complete manufacturing processes control, goods traceability, labels print-out, real-time inventory and progress status of production orders.

OTOMES allows to:
- Quantify the manufacturing performances by counting good products and scrap
- Monitor WIPs (Work in Progress) recording consumption, times and resources
- Measure costs with higher reliability on the values with real-time analysis
- Upgrade the Company control mechanisms
- Improve efficiency and flexibility of the processes
- Eliminate paper documentation and filing, sort and keep up-to-date all documents
- Achieve Processes know-how;
- Introduce the users to a Total Quality manufacturing system;
- Improve Quality standards with total goods traceability for certification procedures;
- Act as warehouse management by location with automatic loading and picking;
- Identify goods by batch management and labelling;
- Automatically record machine downtimes and the reasons for them;

OTOMES HIGHLIGHTS

- Provided With Many Features
  - Production
  - Warehouse
  - Quality
  - Business Intelligence
  - Customize environment for office and shop floor

- Simple
  - Projected to optimize usability
  - Customize environment for office and shop floor

- Powerful
  - Direct connection to machinery
  - Integrate all information in one database
  - Direct connection with ERP and resident software

Specific for Production Management
- Created and developed for production management
- Many successful stories all around the world
MAINTENANCE MODULE

OTOMES Maintenance provides an intelligent solution to maintenance. It delivers a proven, cost-effective tool, helping manufacturers to manage their assets in a way that results in increased productivity, reduced downtime, and better compliance with industry certification and safety standards.

The business goals of this module are:
- Deploy maintenance resources effectively
- Manage maintenance-related work order processes efficiently
- Schedule maintenance based on asset condition rather than on arbitrary dates
- Model scenarios to determine optimum preventive and predictive maintenance
- Create customized reports to meet business-specific asset management needs

Key Performance Indicators
Maintenance module creates customized reports and analysis that can be used to forecast likely problems in time to prevent them and a control dashboard to have real time information about plant and machinery. Starting from real data coming from the plant some KPIs are created. The main ones are:

Plants
- Total number of downtime in an interval time
- Quantify downtime hours
- Preventive (proactive) maintenance/Total Maintenance

Maintenance Service Quality
- Average response time (per intervention type / stoppage reason)
- % of solved repair service
- Average time of repair
- Backlog (n° open requests / total finished repairs)

OPERATOR TIME MANAGEMENT MODULE

This module is used to manage the Operators working time. As in case of machine stoppages, through the Manager, the Operator can list different reasons for the down time. Moreover, the Manager can in real-time monitor the Operator status and if necessary change its work-center assignment.
SLITTER MODULE

A special section is dedicated to the Slitting process and to the management of the Cut Assembling plan. Since the slitters can process simultaneously several production orders with the same material, OTOMES manages the Cut Assembling accordingly and automatically calculates the consumption, scrap and trimming for each order.

DOWNTIME MODULE

This module records the reasons for the stoppage using a tree structure allowing the Operator to easily find out the correct reason, while, at the same time, giving a closed list of reasons. It allows the Data-Warehouse to make a precise analysis. Reason groups can be defined to be associated to the different production lines. Each line has its specific work process and consequently the stop reasons are also specific.

Moreover, this module allows real time monitoring of all the machines that are down with their specific active reasons. If machine downtime occurs, OTOMES, if configured, sends an e-mail, a text message or a voice call to the maintenance department according to the particular reason entered.

If the machine stops for mechanical reasons, the information is sent to the mechanic department; if the reason is electrical, the information is sent to the electrical department.

Then after a time (normally 30 minutes, but it is configurable), it means it is not a normal downtime, it might cause a delay in delivery, an email is sent to a customizable group of management. They can receive an email saying the reason of downtime and when the machine restarts the total interval time and the correct reason. So managers are always updated about the plant.

All times are recorded by the system: stoppage start time, call sent to maintenance time, maintenance arrival time, end of stoppage, etc...
QUALITY CHECK

This module is used for SPS management. Unlimited amount of measurement types and unlimited number of paper can be defined. Three different types can be created: numeric, Boolean and text. Whenever a new SPS paper is created the measurements are defined and the control chart is allocated to a specific work-center. Measurement intervals can be defined in each paper and, if required, the Quality check module automatically acquires tolerances from the orders in process.

TECHNOLOGICAL TRACKING MODULES

These modules enable goods and process tracking by direct connection to the machine automation system (PLC) to have real-time access all production parameters. OTOMES knows real-time the order status on all the plant’s machines and consequently allocates collected production parameters to the specific on-going order, or to the job order or to the product batch. For example, in an annealing furnace, for each batch it is possible to access the processing times, the oven temperatures, etc...
OTOMES WMS solution enables you to see which inventory is or will be available. It improves supply chain management with end-to-end fulfillment from order inception to delivery. OTOMES not only manages the main warehouses with finished products and raw materials but also all the intermediate warehouses.

OTOMES WMS allows you to manage and control all warehouse activities: from receipt of material, suppliers or production to shipment. It automatically updates hidden intermediate warehouses between machinery and machinery and let you control products in every step of production flow.

— Reduce inventory
— Improve shipping accuracy
— Increase inventory control at location level
— Reduce direct operating costs and increase overall revenue
— Space Optimization
— Increase customer satisfaction

WAREHOUSE MANAGEMENT SYSTEM

Document Management Module runs horizontally compared to the other modules and includes a function for document distribution to all the system users.

Usually for the Quality system the Operators must have access to a series of documents concerning Tool Calibrations, Procedures, Manuals, etc... that are usually distributed by Quality Control Managers.

Without the use of OTOMES, whenever a new release of such documents is issued, someone must move to every work-center to collect the old copies and leave the new ones, with the frequent possibility of an old version being left behind.

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BUSINESS INTELLIGENCE DASHBOARD

OTOMES collects data that is stored in the Data Warehouse database. The database is available for statistical analysis and report that are developed in BI module.

Customized Company Dashboards can be created through the configuration of the KPI Module.
A standard KPI dashboard is created with a predefined solution while customized KPIs are created starting from customers’ requirements: actually they are vertical (can be used at any hierarchical level, in any function, obviously with different level of detail and content) and from an architectural point of view they represent the ‘top of the iceberg’, since they are basically used only to present information to allow analysis and possibly simulation.

The reports are created during the analysis stage, but the data shown is continually updated in-line with the current policies decided on within the Company.

OTOMES contains a BI session that allows viewing of the multidimensional reports and graphs.

Most represented KPI parameters:
— Budgeting Control;
— Efficiency Index;
— Stock Rotation;
— Scrap & Second Quality; Lead Times;
— Produced quantities / consumed quantities, etc.

ABOUT OTOMES

More than 1.800.000 Tubes/Day managed by OTOMES

More than 100 mill lines completely automated installed in over 20 plants all over the world

Over 60.000 Tons/Day managed by OTOMES

More than 60.000