

Q3-MET

Manufacturing Execution System (MES) for the metals industry

BENEFITS

Leader in metal plants know-how, in processes, automation and MES guarantees an efficient and class leader MES performance

Flexible solutions, from standard modules for fast startup to custom solution

Strong knowledge in providing master data and data integration with ERP systems

Reduced production costs thanks to increased throughput, quality improvements, stock reductions, optimized production schedule and control of logistic constraints, improved production yield, automatic evaluation of material quality and issuing of quality certificates

ROI <1 year to 3 years

PROCESS

Q3MET supports the demanding requirements of a modern metals producer, from the receipt of the customer's order to its execution, based on the ISA95 standard. The modules are designed to manage the entire sequence, from the acquisition of customer orders to invoicing, through the planning steps: order acceptance, planning, optimization, scheduling, production tracking, quality tracking, storage, shipping, quality certificate, invoicing and customer acceptance.

Q3MET gives business process transparency from shop floor to management. Danieli Automation MES projects provide the customer with know-how and well-defined and performing MES solutions:

- > Requirements analysis and definition of the MES solution based on extensive experience at major metals producers worldwide.
- Extensive experience in the functionality of the entire lifecycle of the order, request for quotation to invoicing and integration of this flow of information with the various enterprise systems: ERP, APS, CMMS, LIMS, Process Control System, weighbridges, barcode readers etc.
- > High capacity for analysis and definition of integrated solutions based on internationally recognized best practice. Management analysis sessions with customer teams,

business process analysis and mapping of system and process functions.

- > Extensive system integrator experience in the metal producing operations, from ERP to the field.
- > Provide consultancy and integration advice for MES and ERP systems, the definition of the logical flow of data and techniques of integration.
- > Analysis, organization and centralized management of Master Data.
- > Provide a single, centralized data repository, data control and alignment, security management.
- > Interfacing with ERP and process control systems, consulting for the definition of interfaces and their implementation, based on extensive experience and established interfacing standards.
- > Warehouse management: locations, movements, internal transport.
- > Material management – in terms of traceability, history (relations with the father and son), suspension, repair and alternative machines.
- > Certification management, lot creation, insertion of laboratory measurements, certification and printing quality certificates
- > Definition and implementation of operational reporting at centralized level, Web security and availability.
- > Business Intelligence system with dashboards and KPIs to support the process of continuous improvements.



EQUIPMENT

The Q3MET supports the plant in:

- > Production campaigns
- > Manufacturing sequencing, with production phases and working instructions.
- > Physical storage location of raw materials, semi- and finished products.
- > Support assigning materials to production orders.
- > Support in creating optimized daily/shift production schedule.
- > Dispatch of production schedule to relevant production areas, including material location, working instruction and sequence.
- > Product traceability and genealogy.
- > Order progress.
- > Advanced data analysis and KPIs

Sales – supports sales operations that are specific to the metals industry, manages customer, order and pricing.

Master Data & Order Dressing – checks order feasibility, provides easy rule-based order dressing, uses configurable plant quotas for proper planning and quality data.

Planning – optimizes and manages production plans and order progress.

Scheduling – scheduling of each individual plant unit on the basis of sequencing rules with the aim of equipment usage, setup time reduction and inventory optimization.

Production Progress Control – automatic and manual data collection/acquisition, interfacing with process control systems, tracking of schedule progress and real-time update of order progress and status, product tracking and genealogy.

Quality – test laboratory support, and quality

certificates management for chemical, mechanical and non destructive tests in terms of sample taking scheduling, data collection and certification of the material Stockyard – raw materials, semi-finished and finished material storage management Web-Report – production and quality reports through Web access.

Q3Intelligence – Data Warehouse and Business Intelligence (BI) with key performance indicators (KPI) for advanced data analysis.

PERFORMANCE ACHIEVEMENTS

- Q3MET is installed in many metal producers plants worldwide. Recent references are:
- > Severstal Cherepovets, Russia, 11.4 Mtpy, 17 shops, 4,000 users, minimization of production costs, improved yields, reduced inventory & improved quality & shipping.
 - > Nucor Steel Hertford, USA, 1.5 Mtpy, steelmaking and plate mill.
 - > VIZAG Steel, India, 3.4 Mtpy, iron and steel making, section and rolling mills.
 - > Duferco Danish Steel, Denmark, 250,000 tpy, bar mill, support of sales, billet purchase, production optimization, tracking, quality, shipping operations and Business Intelligence KPIs.
 - > MMK Metalurji, Iskenderun & Gebse, Turkey.
 - > Severstal Balakovo, Russia.
 - > OMK Vyksa, Russia.
 - > JESCO, KSA.
 - > UNICOIL, KSA.
 - > Aceria de Angola, Angola.