



3DEXPERIENCE®

MES 4.0 POWER TOOLS FOR MANUFACTURING OPERATIONS MANAGEMENT

Brochure

MES 4.0

POWER TOOLS FOR MANUFACTURING OPERATIONS MANAGEMENT

Removing the roadblocks that stand in the way of improving product quality, compliance, and production efficiency are where Manufacturing Execution Systems (MES) excel and deliver long-term value in manufacturing operations. Automating manufacturing compliance, quality, and production at scale is why MES solutions are critical to modern manufacturing.

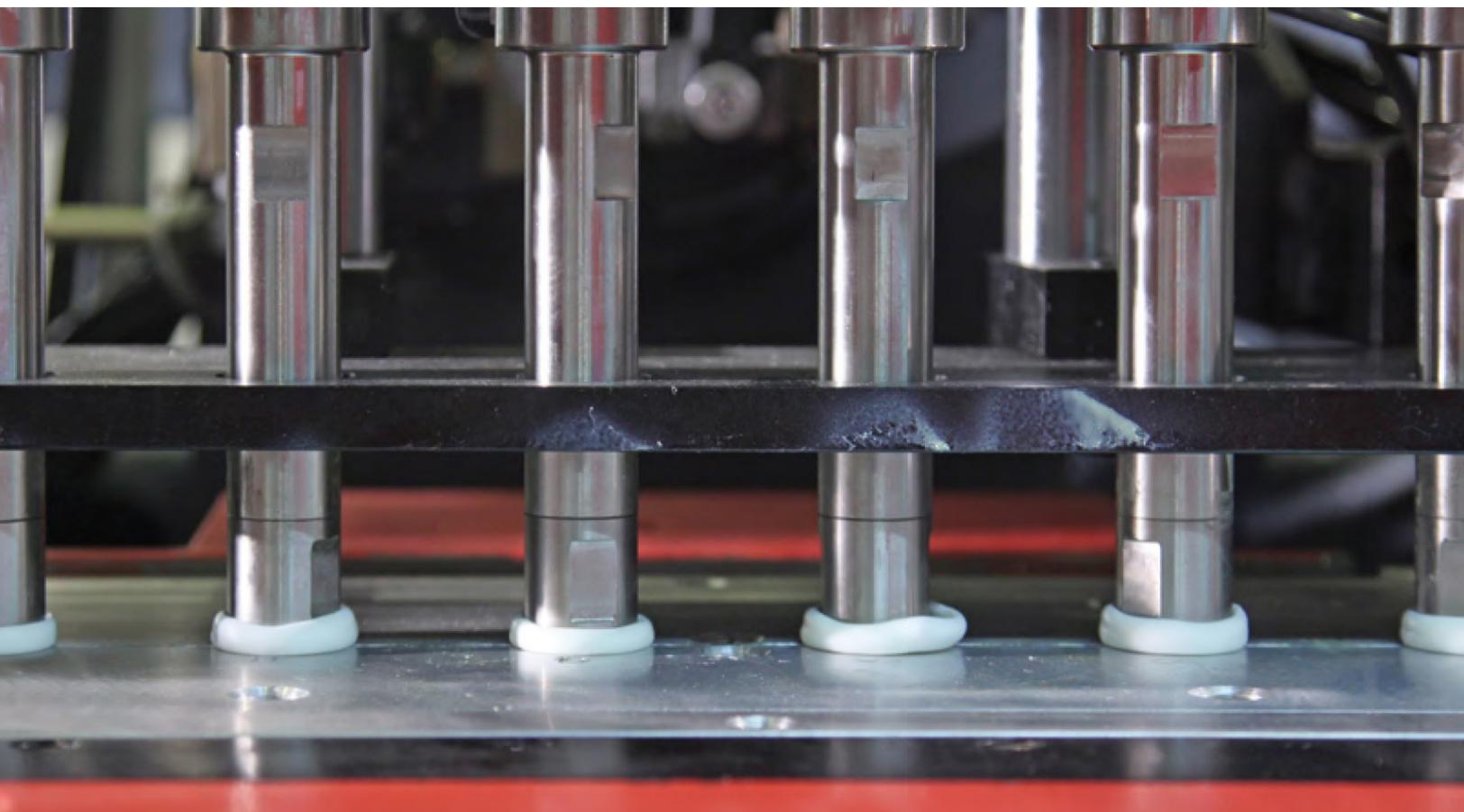
- With DELMIAWorks' MES, thermoset composite products manufacturer, Mar-Bal, Inc., achieved significant cost savings, including the following:
- \$83,000 - eliminated regular and monthly physical inventories
- \$62,000 - increased production reporting accuracy using the RealTime system
- 5,000 potential machine-hours gained by eliminating downtime for physical inventory

DELMIAWORKS MES CUSTOMER RESULTS ACHIEVED

- 10.8% Average Savings in Cycle Time
- 9.3% Average Total Plant Productivity Improvement
- 9.8% Average Improvement in Eliminating Work Center Downtime
- 14.8% Average Present Level Machine Downtime Recorded
- 12.6 Hours (Average) Saved Per Week in Scheduling

DELMIAWORKS DELIVERS SAVINGS

- **Average Payback Period**
 - 6 to 18 months (less than one year is typical)
- **Scrap Reduction**
 - Typically a 10 to 30% reduction
- **Productivity Improvement**
 - Typically a 5 to 10% improvement (most systems are justified on a 2 to 4% improvement)



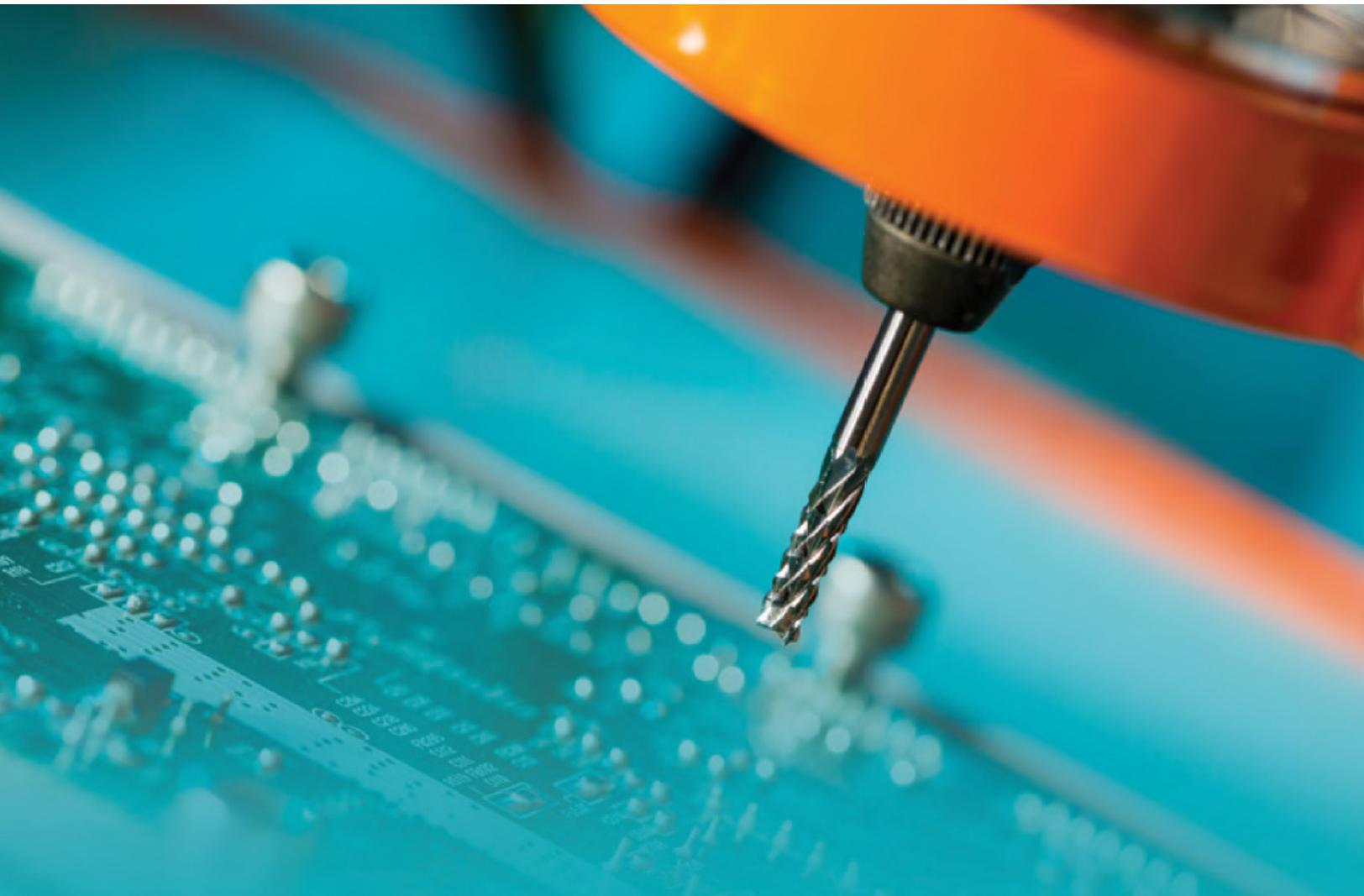
DELMIAWORKS MES DELIVERS GREATER VISIBILITY AND CONTROL ACROSS SHOP FLOORS

DELMIAWorks' MES prioritizes the productivity of shop floor operators, supervisors, and production team members with a rich series of features they can use from day one. It's designed to enable shop floor operators and supervisors to perform, record, and monitor shop floor activities, providing key performance and status indicators across the shop floor.

By providing state-of-the-art process monitoring tools that track process data parameters, including item numbers, work center details, lot numbers, dates, and more, manufacturers can adapt faster to changing market demands. Manufacturers can also quickly identify planned versus actual production variances, unplanned downtime, real-time production quality, and Overall Equipment Efficiency (OEE).

Gain new insights from detailed inventory tracking (material and part movements, levels, and consumption) and a comprehensive series of quality tools (integrated PLM, SPC, doc control, and advanced QA analysis). In addition, the standard configuration includes improving production traceability, tracking and genealogy, business activity monitoring (production alerts and Key Performance Indicators), and lean manufacturing tools (KanBan and Heijunka systems).

The bottom line is that DELMIAWorks MES helps manufacturers remove non-value-adding activities on the shop floor and helps maximize shop floor productivity.



VALUABLE FUNCTIONALITY DELMIAWORKS MES 4.0 DELIVERS:

Planning and Scheduling

Drag and drop scheduling provides real-time flexibility in adjusting production schedules to changing customer and market demands. DELMIAWorks' MES Planning and Scheduling is as easy to use as a spreadsheet. Incorporate all demand as equipment, approved operators, tooling, and planned downtime into one central engine that optimizes manufacturing schedules to meet customers' expectations while also improving lean manufacturing performance.

Manufacturing Intelligence

Leverage the data collected by DELMIAWorks MES to bring up-to-the-minute Overall Equipment Effectiveness (OEE) data and Key Performance Indicator (KPI) reporting and analysis to your fingertips for informed decisions

Inventory Optimization

Maintain lean inventory levels and manage all aspects of manufacturing demand with Material Requirements Planning (MRP), automated Kanban-based load-leveling module based on Every Part Every Interval (EPEI) calculations.

Tooling Management

Manage tool prep and setup to assure tools, dies and fixtures are ready to run production jobs when they are scheduled.

Preventative and Predictive Maintenance

DELMIAWorks MES enables manufacturers to perform regular machine and tool maintenance to ensure work centers operate and produce parts efficiently. With DELMIAWorks' preventative maintenance tools, manufacturers can implement a complete maintenance program for all your machines, tools, dies, auxiliary equipment, and more. Maintenance personnel can be immediately alerted to problem areas such as down work centers or machines experiencing problems. This immediate notification of problems can minimize downtime and lost production. In addition, by tracking the actual usage (hours and cycles run) of equipment, DELMIAWorks MES-based manufacturers can proactively determine the use and wear of various equipment being monitored and create a preventative maintenance schedule that can minimize downtime.

Quality Management

The DELMIAWorks Quality Management Software (QMS) offers an extensive suite of tools and capabilities necessary to cost-effectively manage quality issues while streamlining manufacturing and business operations and facilitating collaboration. It is a powerful solution that enables compliance with the most stringent quality standards, including automotive (TS), medical (FDA, 21 CFR Part 11), ISO standards, and a reduced cost of quality.

A leading Tier 1 automotive supplier in the Midwestern U.S. observes that *"With DELMIAWorks, we've reduced maintenance costs alone over 70 percent, and achieved lean objectives like reduced cycle time, automated workflow, and the elimination of redundant processes."*



REAL-TIME PRODUCTION & PROCESS MONITORING

- **DELMIAWorks MES supports RealTime Production Monitoring, enabling manufacturers to gain immediate insights into every production task as they occur.** All aspects of production are tracked and the data they generate are stored in a historian database for cost variance, production efficiency and yield analysis.
- **Real-time data can be captured at the component, part, production line, machine and process levels.** Once captured, real-time data is available to any DELMIAWorks application including ERP, MES, CRM and many system modules. Many manufacturers are also using real-time data to gain immediate insight and status on which customer orders are ready to ship, automatically updating the schedule and finished product counts.
- **By linking directly to every production machine, RealTime can monitor discrete, cyclical and continuous operations.** Monitor work center performance and achieve greater visibility and control across every machine and process on the shop floor using real-time production monitoring. DELMIAWorks MES is accessible on any device that can access the Internet, providing 24/7 access to real-time data.
- **Total parts created, production time, downtime, rejects and parts remaining to be produced are immediately monitored.** Production shift reports are generated automatically, making product reporting and inventory reconciliation a simple task. Manufacturers who need shop floor monitoring and ERP communication at its most accurate, RealTime is the best tool.

One of many customer successes with Real-Time Monitoring:



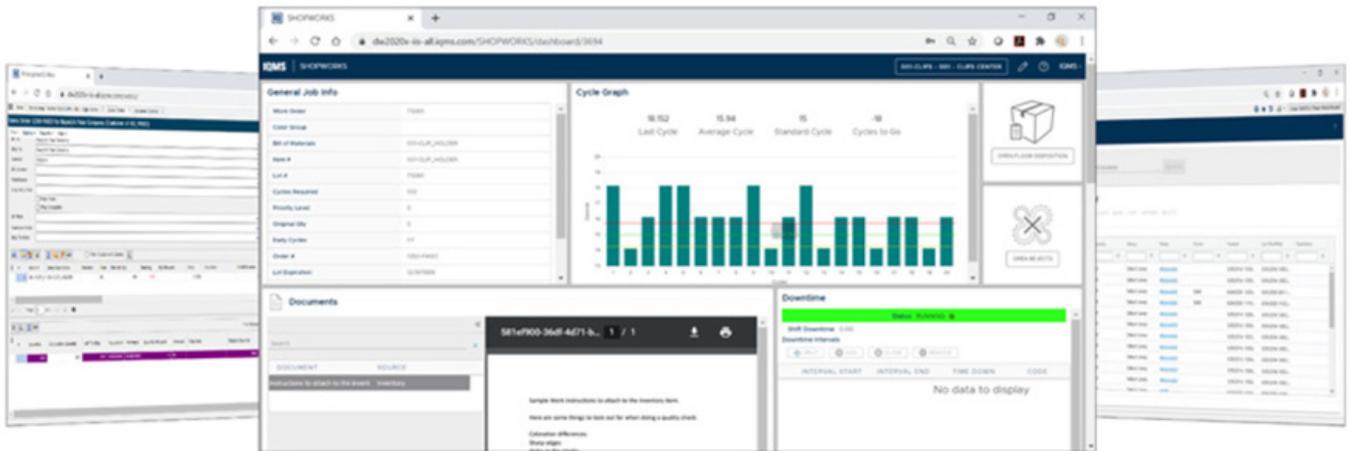
"Looking at real-time data three or four times a day allows me to get a snapshot of what's going well, what's not," Marion Gray, PodPack CFO says. "If I see an operator's having a particularly wonderful shift, I make sure that when I'm doing my afternoon lap through the plant, I can stop in and congratulate them on having such a good day. On the flipside, if we have lines that are continually having issues, I'll ask my maintenance team or my shift leads if they've been able to troubleshoot the problem."

Stay connected with DELMIAWorks on any Internet-Enabled device

DELMIAWorks provides real-time manufacturing, MES information on any Internet-enabled device, including smartphones and tablets. Access vital manufacturing data from anywhere, anytime. Keeping workers connected with the latest manufacturing data helps improve the accuracy, impact, and speed of decisions, leading to greater results.

Ensure Production Is Working On the Latest Scheduling Requirements

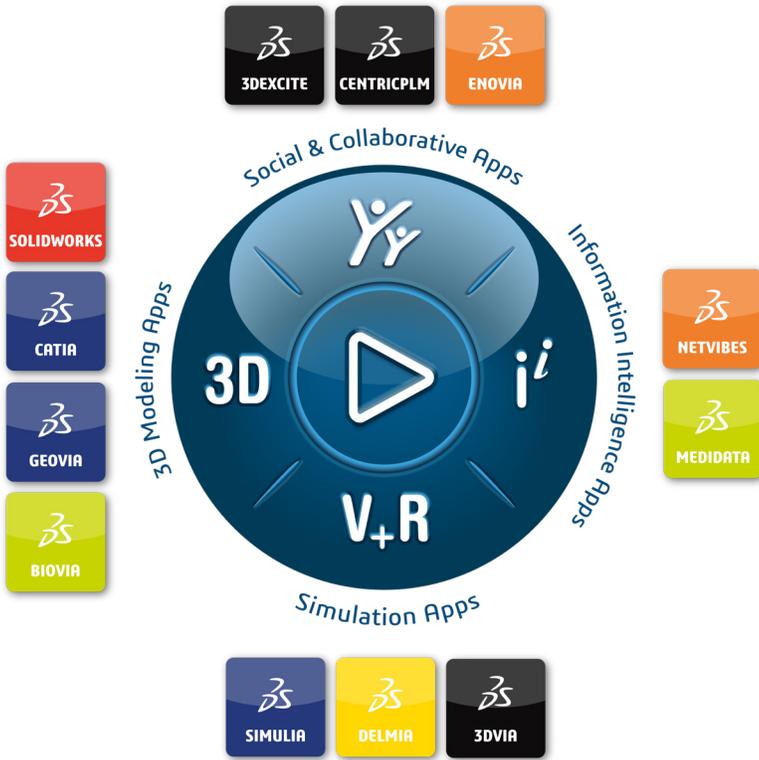
SHOPWORKS, a touchscreen-based shop floor interface to DELMIAWorks, improves production efficiency with configurable Work Center dashboards. Key benefits include streamlining data access and RealTime™ information collection and availability, improving quality, and reducing costs. SHOPWORKS also helps digitize manufacturing operations and improve production efficiency.



SHOPWORKS is a multi-function configurable interface that enables operators to practice the disciplines of MES in a streamlined and job specific manner.

For more information, please visit www.3ds.com/delmiaworks or call 1.866.367.3772





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