Epicor® Mattec

Manufacturing Execution System Overview

EPICOR

Real-Time Insight for Better Production

Epicor Mattec

Manufacturing Execution System (MES)

Staying competitive isn't easy in today's evolving manufacturing space. How do you increase efficiency and reduce costs while still complying with your customers' requirements? That's where the Epicor Mattec Manufacturing Execution System (MES) comes in. Mattec MES utilizes Industry 4.0 technology on the shop floor—such as cyber-physical systems and Internet of Things (IoT) sensors—to help you gain the competitive advantage you need both now and in the future.

Discrete manufacturers use Mattec MES to improve quality, reduce scrap, ensure on-time delivery, and boost production throughput. It's all about improving production execution and performance efficiency to gain a competitive advantage. How do you make more without more assets? Uncover and eliminate downtime to make more parts or cut costs. MES can improve profitability by helping you find more capacity.

Epicor Mattec MES collects data directly from equipment and operators on the shop floor in real time, minimizing inaccurate and time-consuming manual data collection. With information instantly in your hands, you can become proactive—anticipate and solve production problems before they happen. Real-time insight helps you pinpoint critical issues, reduce waste, and improve quality and customer service. Everyone in the plant and throughout the business can take action to improve manufacturing performance.

Designed For Your Industry

Epicor Mattec MES was designed with your industry in mind. With its origin in rubber, plastics, automotive, and the metals industry, Epicor Mattec has more than 20 years of domain and industry best practices built in, yet it offers you the agility to meet changing demands and requirements.

Epicor Mattec is an out-of-the-box configurable MES solution that enables rapid implementation while still being fully extensible to meet the most demanding requirements.

Deploy Your Way

Epicor Mattec MES isn't just a platform—it's a purpose-built point solution, meaning you won't need extensive consulting and expensive customizations to get a quick return on your investment. Out-of-the-box tools for every level of the organization make it easy to see almost immediate business results, and Epicor makes it simple to connect to your data—no matter how timeworn or modern. Epicor Mattec MES also uses open connectivity protocol (OPC), programmable logic controllers (PLC), machine interface units (MIU), and personal computer (PC) interfaces.

Usability

Epicor Mattec MES collects production data automatically—no more manual data collection to worry about. Operators on the shop floor use touch screen technology to add depth and dimension to the automatic production data, so you get a clear picture of the what, why, and when of downtime, cycle time, quality, and scrap. The system also has real-time alerts, notifications, and other communications, so the people who need to know are in the know when it matters most, letting them take immediate action to correct a problem or improve performance.

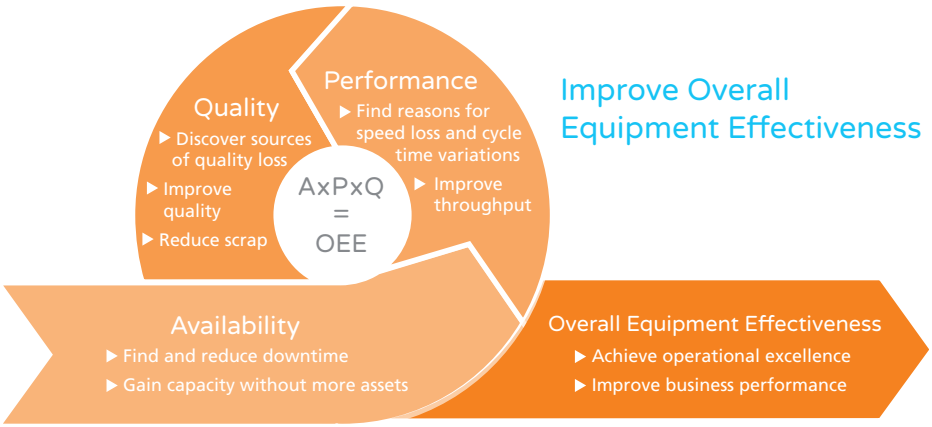
Whether you're making on-the-fly production schedule changes, setting up daily operations meetings, or managing dashboards and reports, Epicor Mattec is easy to use and ideal for one-click drill-down insight and reporting. Most importantly, it's system-agnostic, so you can link it with your enterprise resource planning (ERP) solution to connect your top floor to your shop floor.

Epicor Mattec MES value for your business

- Improve cycle times, overall equipment effectiveness (OEE), and plant productivity
- Eliminate manual data collection
- Improve scheduling agility with real-time insight into machine performance
- Monitor every cycle and every machine 24/7, giving you near-instantaneous visibility into production and quality problems
- Reduce scrap and rework with automatic part qualification and part rejection
- Capture part and machine process data for traceability purposes
- Maximize production and reduce costs by automatically capturing statistical process control (SPC) and statistical quality control (SQC) results
- Monitor utility consumption and pinpoint energy savings opportunities at each machine

"We used to run 3–4% scrap. Last month we were down to 1.37%. You can't get much better than that. That's world class, and is largely attributable to Mattec. It's the tool that gives us the numbers we need to make good decisions."

Dave Rose, Quality Engineer
Johnson Controls



- Minimize downtime with faster response and resolution
- Maximize machine loading and minimize downtime to reduce costs and capital expenditure
- Support continuous improvement initiatives and programs
- Win more business with improved customer ratings and satisfaction
- Improve equipment reliability and boost longevity
- Pinpoint energy savings opportunities, reduce energy consumption and total power demand
- Examine tradeoffs between using existing equipment and capital investments
- Support continuous improvement initiatives and programs

Real-time insight for better production and business performance

Your business isn't like anyone else's, and neither is ours. Is better productivity your goal? You need accurate data and fast information. If you've set your sights on operational excellence, you need it even faster. Either way, real-time automated production and process data direct from your machines is the gold standard in performance improvement, and we exceed that standard with analysis, reporting, and planning to help you achieve your goals.

Epicor is there when you're doing strategic planning and turning strategies into tactics for improvement, because getting better is easy when the facts are clear. Ready to retire your manual data collection and intervention steps? With Mattec MES, you get accurate data instantly—not minutes, hours, or shifts later. You and the entire operations and production teams can work collaboratively to reduce waste, inventory, and downtime; optimize equipment and capital and worker resources; and drive performance gains with Epicor.

Real-time production information boosts your continuous improvement initiative and lets you discover hidden opportunities to increase quality and yield. With more free capacity and jobs running on schedule, you can consistently exceed customer expectations and gain more business.

Office, mobile, global

Take the power of Mattec MES with you on a web-enabled mobile device or tablet with browser-based dashboards, information, and analysis. Plus, it doesn't matter if you have a single operation or a distributed network of plants internationally, Mattec is currently available in more than 10 languages and suitable for language customization.

Monitoring, Data, and Communication

The shop floor is a real-time environment—so your MES should be too. Things happen and change instantly. Sometimes a machine is down just a few minutes more than you thought, or perhaps the scrap or part count is off—just a couple of pieces can mean the difference between a happy or frustrated customer. Real-time, automatic production monitoring and process monitoring with Epicor Mattec keeps your business on track and eliminates the ripple effect to customers and vendors.

We're there to help you reconnect the shop floor by constantly monitoring data directly from the machine and turning it into information for the shop and management. You'll receive automatic notifications when and how you need them, and data to feed the rest of your Mattec system and your business, such as:

- Automated production monitoring for downtime and runtime
- Automated monitoring for process parameters

"It's hard to overstate how vital Mattec is. It doesn't solve our problems for us, but you have to know you have a problem before you can solve it. Mattec helps us focus our decisions and resources. That's absolutely key."

—Sam Mahon, Production Control Manager | Chrysler

Epicor Mattec MES

Deployment Choice—Cloud

Production Monitoring

- Machine integration using OPC or IoT sensors
- Automatic data collection
- Monitor uptime/downtime
- Monitor actual cycle times and scrap

Energy Monitoring

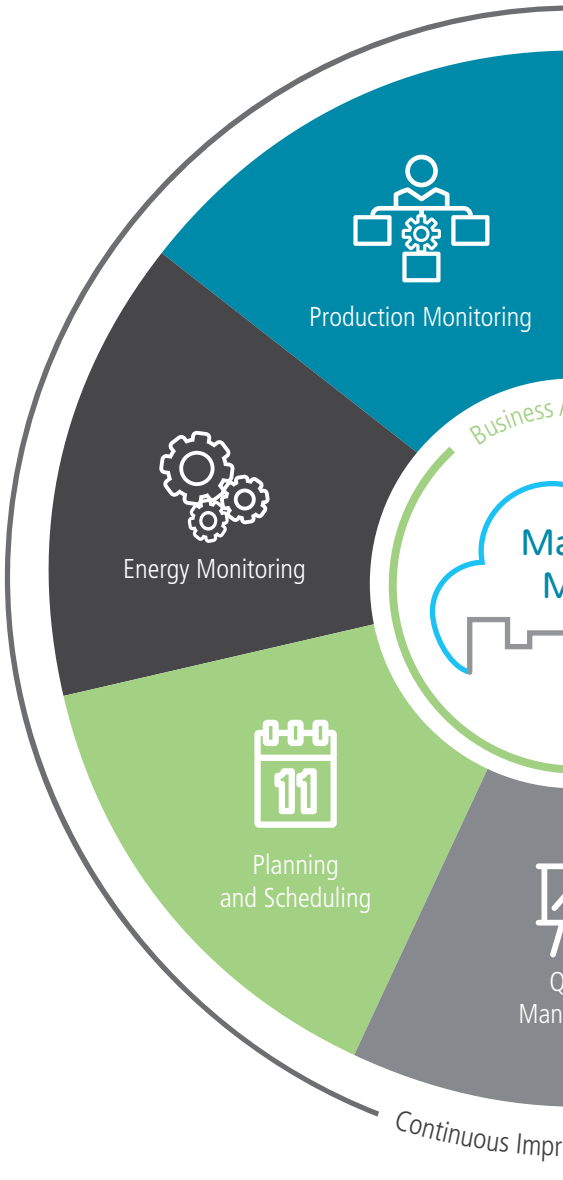
- Monitor and analyze energy consumption by machine, job, shift, product
- Understand maintenance and quality in context of energy consumption
- Analyze direct energy required to produce any item
- Create optimal startup sequence to lower peak consumption
- Understand trade-offs between using existing equipment and capital investments

Planning and Scheduling

- Visual production scheduling and planning for machines and tools
- Automatic schedule adjustments
- Kanban scheduling
- Labor and material requirements forecasting
- Machine capacity planning
- Tool conflicts

Quality Management

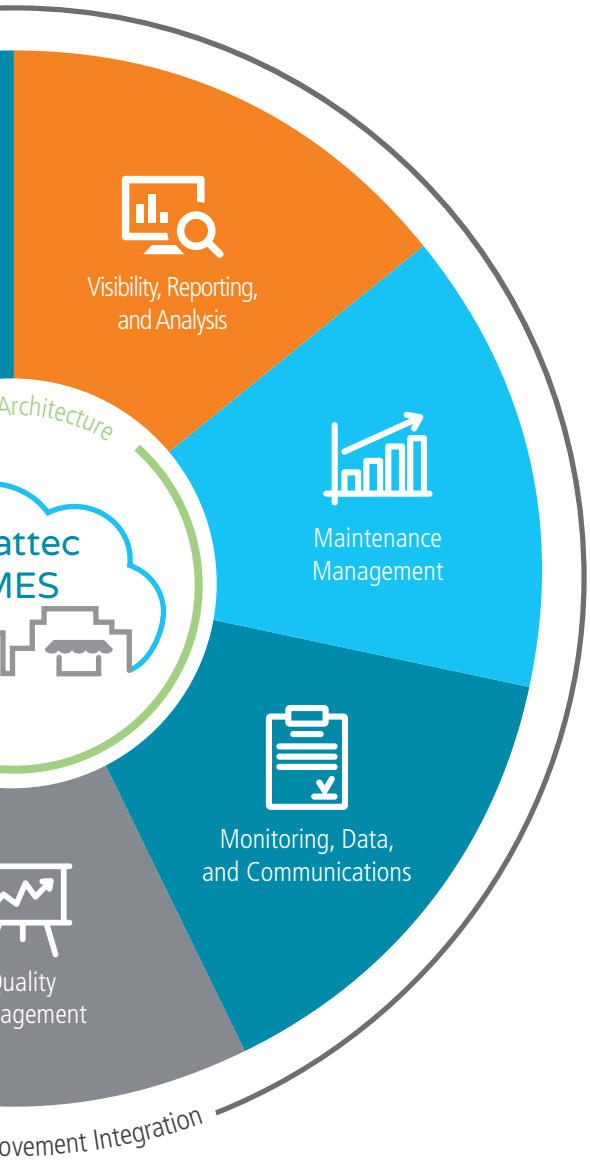
- Automated process monitoring and parameter violation alarms
- Automatic part qualification/rejection
- Statistical process control (SPC)
- Statistical quality control (SQC)
- Monitor every cycle and every machine 24/7



Continuous Improvement (CI) Integration

- Lean
- Six Sigma®
- Theory of constraints (TOC)
- Total productive maintenance (TPM)
- Common and custom CI metrics
- OEE, asset utilization, capacity utilization
- Mean time between failures (MBTF)
- Minor stops per runtime hour (MS/RH)
- Mean time to repair (MTTR)
- Root cause factors

Deployment Choice—On Premises



Visibility, Reporting, and Analysis

- Automated overall equipment effectiveness (OEE)
- Accurate, consistent efficiency metrics
- Production metrics, from machine to enterprise
- Downtime and scrap analysis
- Operator labor and productivity visual root-cause indicators
- Real-time screens and views

Maintenance Management

- Preventative maintenance for machines, tools, and auxiliary assets
- Generate automatic MRO tasks
- Schedules maintenance around production
- Rules-based maintenance based on runtime, cycles, or time
- Real-time alerts and reports

Monitoring, Data, and Communications

- Get alerts about production and machine monitoring issues
- Accelerate issue response and resolution
- Operator help calls with automatic notifications
- Automated alerts, messaging, and escalation
- Automated monitoring for process parameters

Business Architecture

- Accepts digital and analog machine signals directly from sensors or PLCs, or via OPC-compliant PLCs
- Includes a template specific to plastics, metals, rubber, and related industries, with complex capabilities like active cavity tracking and family molding
- Microsoft® Windows Server® and Microsoft SQL Server® (current versions)
- Open architecture for interfacing to business systems
- Out-of-the-box bi-directional interface to Epicor ERP

We give you real-time, accurate data. You start asking the right questions. Your business makes well-informed, timely decisions.

Operational performance

- Which orders should I run next?
- Are orders completed to specs?
- Should I combine jobs or run them separately?
- Why is there more scrap during certain jobs?
- Why is OEE low? How do I improve?
- How do I increase availability?
- Where can I obtain 5% more capacity?

Financial performance

- What are my key loss categories?
- What are my best products?
- How much do specific losses cost?
- Which assets are most efficient?
- How can we boost service levels?
- Which plant is most efficient?
- Where can I cut energy costs?

- Plant floor viewer with real-time machine state and job monitoring
- Automated alerts, messaging, and escalation
- Operator help calls with automatic routing and notifications
- Real-time, automatic alerts for machine conditions, cycle and process variations, efficiency, scrap rates

Visibility, Reporting, and Analysis

From the top floor to the shop floor, it's important to know how your business is performing at all times. That's why Epicor built a powerful out-of-the-box reporting and analytics system and delivers it in easy-to-digest dials, graphs, and charts. Mattec scoreboards and displays empower front-line professionals to take action and make improvements instantly, without having to wait for days or weeks to find out how they're doing, or if they face machine or tool problems. Whether it's regarding maintenance, quality, or other operations, stakeholders have facts in-hand to support their recommendations, and management has what they need to understand tradeoffs from every angle. Epicor Mattec MES delivers a comprehensive picture of production.

- Consistent, automated OEE and other efficiency metrics
- Production metrics from machine to enterprise level
- Downtime and scrap analysis
- Operator labor and productivity
- Performance versus schedule, labor forecast, tool conflict, job and part history

Real-Time Planning and Scheduling

Does your production schedule ever change on the fly? Shift supervisors probably wrestle with it every day, even when things are running smoothly. With the Epicor Mattec click-and-drag production schedule, you can change instantly based on new requirements or watch the schedule update and adjust automatically based on actual machine speeds, production counts, equipment status, conditions, or job specifications. Epicor makes it easy to plan by showing line availability based on machine/part/tool compatibility, and the system shows you optimal plans based on prior part performance. What-if analysis combined with built-in machine capacity planning and labor and material forecasting makes Mattec the first choice in MES. You can look to Epicor Mattec to do all your production planning and scheduling, or integrate it with any other MRP and/or ERP to enhance its powerful capabilities.

- Use visual drag-and-drop, real-time scheduling and planning for machines and tools
- Make automatic schedule adjustments
- Perform Kanban scheduling
- Forecast labor and material requirements
- Optimize machine capacity planning
- Identify and resolve tool conflicts
- See real-time view of actual production availability
- Complete usage-based maintenance planning

"Before the mold opens, Mattec tells us whether the product is good or bad. That translates into a better product for our customer, because we're actually building in the quality rather than inspecting it."

Mitch Stein, Plant Manager | Rexam Corporation

Production Optimization

More capacity, same assets—that's what Epicor Mattec is there for. When you get more free capacity and jobs run on schedule, you consistently exceed customer expectations and earn more business. Knowing which changes have the greatest impact makes it easy for everyone to work toward the same goal, whether that goal is happier customers, more product, or better cost structure. We're here with data and information to answer key questions about performance, so the tough decisions get a little easier.

- Manage machine loading and minimize downtime
- Manage family of parts and color changes
- View cost reporting for scrap and machine downtime
- Compare actual cycle times to standard and planning rates
- Optimize assets, plants, and network
- Evaluate schedule conformance

Energy Management

Scheduling workload in a way that reduces the plant's total power demand and takes advantage of rate variations can translate to significant savings—in terms of total energy consumed and the actual cost per kilowatt hour. Tackle power consumption and the cost of energy with Epicor Mattec and Energy Monitoring. We help you analyze load patterns, production requirements, and resource energy demands, giving you the power to reduce peak demand and capture energy savings. With software, you can quickly and easily capture and analyze energy performance indicators (EPIs) to reduce consumption and cut costs.

- Monitor and analyze energy consumption by machine, job, shift or product
- Receive real-time scorecards
- Understand maintenance and quality in context of energy consumption
- Evaluate idle vs. shutdown-restart tradeoffs
- Analyze price accuracy with direct energy required to produce any item
- Monitor energy by asset, job leveling, and loading

Quality Management

- Monitor every cycle and every machine, 24/7
- Automatically qualify or reject parts
- Track part and machine process data for traceability purposes
- Get statistical quality control (SQC) and statistical process control (SPC)
- Enable automated process monitoring and parameter violation alarms
- View part weights and dimensions, machine process parameters and correlation analysis

Maintenance Management

Machine maintenance planning based on calendar can result in unnecessary maintenance being done, or worse—unexpected machine downtime as a result of late maintenance. Epicor Mattec MES provides real-time preventative maintenance for effectiveness.

- Machine and tool preventive maintenance (PM)
- Cycle or run hour PM
- Automated alarms and notices for PM

About Epicor

Epicor Software Corporation drives business growth. We provide flexible, industry-specific software that is designed around the needs of our manufacturing, distribution, retail, and service industry customers. More than 40 years of experience with our customers' unique business processes and operational requirements is built into every solution—in the cloud or on premises. With a deep understanding of your industry, Epicor solutions spur growth while managing complexity. The result is powerful solutions that free your resources so you can grow your business. For more information, connect with Epicor or visit www.epicor.com.

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