

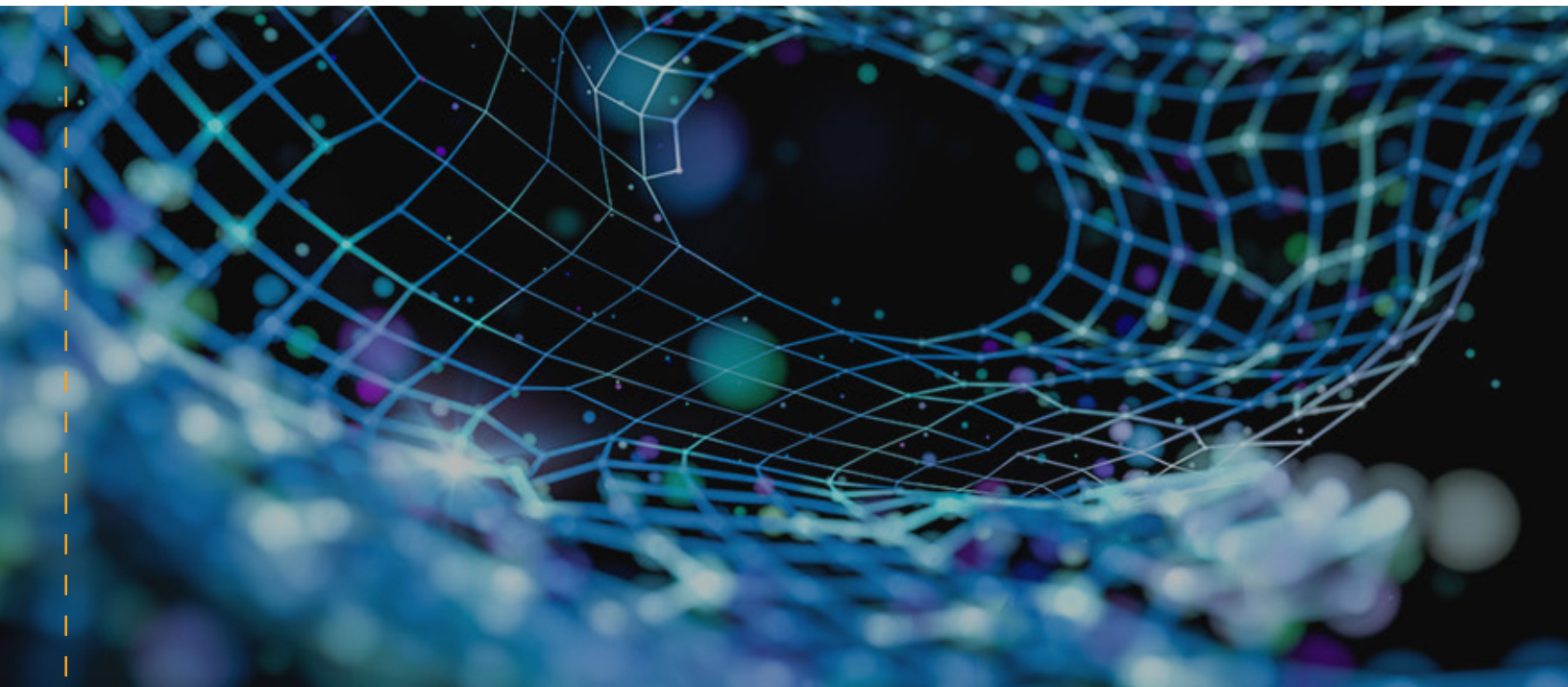


# MANUFACTURING EXECUTION SYSTEM OVERVIEW

## iBASEt **MES** SOLUTIONS

iBASEt's Manufacturing Execution System (MES) enables new levels of visibility, control, and velocity for the Digital Manufacturing enterprise. MES provides a platform for planning, executing and tracking work processes online, creating a paperless environment that assures first-time quality and immediate response to any issue that arises at the plant.

iBASEt MES is designed for companies that manufacture complex products with multiple levels of sub-assemblies, and that are subject to frequent engineering changes.



## **MES** BENEFITS

iBASEt for Manufacturing Execution radically improves manufacturing productivity, quality and compliance by giving operators, supervisors and plant managers visibility through timely access to comprehensive digital data and integrated systems. Operators spend more of their time being productive, and less time looking for instructions or waiting on corrections.

MES is a critical component for smart manufacturers building global value chains characterized by comprehensive connectivity, visibility, and traceability:

- Integrate shop floor and business operations.
- Collect and manage the right data to keep your business moving forward.
- Analyze performance across products and processes.
- Reduce cycle time and costs. Avoid waste, errors, and recalls.
- Create more efficient and compliant operations internally and at supplier sites.
- Streamline process planning, process execution, and quality management.

Using manufacturing data from a single-source system across plants avoids the possibility of conflicting data from manual spreadsheets. Integration to PLM and ERP provide visibility beyond the MES into the entire enterprise. Reliable data allows proper prioritizing of areas for process improvement, and an improved basis for estimating future programs.

## VISIBILITY

One of the top concerns for operations managers is having real-time visibility of work-in-process status, resource availability, and high-quality historical data for performance analysis. iBASet MES not only provides consistent metrics to benchmark the organization and gauge the effectiveness of process improvements, it also provides alerts and helps resolve constraints holding up work at the plant.

Using manufacturing data from a single-source system across plants avoids the possibility of conflicting data from manual spreadsheets. Integration to PLM and ERP provide visibility beyond the MES into the entire enterprise. Reliable data empowers operations managers to prioritize areas for process optimization, identify root causes behind repeating issues, and more accurately forecast future program costs and outcomes.



## CONTROL

MES's detailed and illustrated task instructions ensure that work is completed in the right order, with all the appropriate data collection and validations for first-time quality performance. Standardizing work processes, guiding technicians, and automating validation empowers production managers to produce consistent results while reducing cycle time.

MES systematic business process controls provide an efficient way to ensure compliance and impress auditors and customers. Work sequences with built-in decision branches enforce required procedures. Parts installed are validated against bills of material. All data collection, calculations and approvals are enforced and automatically logged into history, easing compliance with industry standards. The software ensures that only certified mechanics perform specified work steps and that only calibrated gauges are used for critical measurements.

## VELOCITY

Competitive and regulatory pressures demand more efficient and agile processes than paper-based systems can deliver. MES is designed to increase productivity by eliminating wasteful clerical and manual verification steps and ensuring that operators are always using the correct, updated versions of documentation. The software is easy for operators, technicians, and inspectors to use for assigning, tracking, logging, and reviewing work and instructions.

MES enables faster, more controlled resolution of production issues as they arise, including: part shortages, material review, deviation approvals, quality issue correction, and defect containment.

MES adapts as organizations undertake changes to business or engineering processes. Model-based engineering specifications are linked to production processes to facilitate impact analysis and quick incorporation of engineering changes to work-in-process.



## MES FEATURE HIGHLIGHTS

**REPORTS & GRAPHS** — provide visibility of shop floor status, metrics, expectations and trends. From summary reports, drill down to detailed data.

**AS-DESIGNED, AS-BUILT, AS-MAINTAINED UNIT HISTORY** — a full audit trail of the work process from design to execution and inspection, including unit history for the entire tree of subassemblies and components.

**SECURED ACCESS & DATA** — application and database access is controlled by roles, privileges and user login. Additional IP protection and ITAR security controls can be enabled.

**REGULATORY COMPLIANCE** — meets the strictest process management and integrity requirements of the industry including ISO9001, AS9100, ISO13485, FAA, and FDA Title 21 CFR Parts 11 and 820.

**PERFORMANCE & SCALABILITY** — iBASEt's solutions have a track record of proven performance with large user populations. Multiple configuration and deployment options are supported.

**SYSTEM INTEGRATION** — MES integration enables a direct link between the shop floor and key enterprise systems like ERP and PLM. Includes mechanisms for client-to-client integration, application-to-application interfacing, and business-to-business collaboration, including standard integration interfaces.

## iBASEt's DIGITAL MANUFACTURING SUITE

Introduced in early 2018, the Digital Manufacturing Suite is designed for complex, highly regulated discrete manufacturers who seek to digitally transform their operations. The new solution suite enables a "digital thread," connecting operations and sustainment management in a seamless flow of data across the value chain and product lifecycle. The Suite integrates engineering and business systems with manufacturing execution system (MES), supplier quality management (SQM), and product sustainment services such as maintenance, repair and overhaul (MRO).

The combination of integrated PLM, ERP and iBASEt's Digital Manufacturing Suite are central to a digital manufacturing strategy. iBASEt's solution creates the technology infrastructure manufacturers need to harness advances in model-based functionality like augmented reality guidance for the workforce, IIoT connectivity for equipment, new levels of intelligence for decision making, and higher levels of customer and supply chain collaboration.

iBASEt's Manufacturing Execution System (MES) can be implemented as a point solution or as part of the Digital Manufacturing Suite. Many customers that start with the accessible and enticing options provided with MES will eventually mature their operations and value chain to the point that a fuller implementation of the Digital Manufacturing Suite will be critical to growth, transformation, and success.