

APPLIED FACTORYworks®

MANUFACTURING EXECUTION SYSTEM (MES)

A comprehensive MES that runs on both UNIX and Linux-based platforms while offering full features, high reliability and a proven track record of supporting the most demanding automated manufacturing systems.



Industries

- > Semiconductor wafer manufacturing
- > Semiconductor assembly, test and packaging
- > Display manufacturing
- > High-tech discrete manufacturing

Features

- > Full WIP traceability
- > Material and equipment tracking
- > Component-level tracking and tracing
- > Multiple platform support
- > Scalable and customizable to incorporate custom business processes
- > Web Service to support integration with external applications

Benefits

- > Improves response to changing market and plant conditions
- > Achieves low cost of ownership through extensible and flexible platform
- > Provides full product genealogy through component-level history
- > Eliminates operator misprocessing
- > Reduces material shortages and physical inventory
- > Reduces deployment time for rapid ramp up
- > Reduces integration effort by providing pre-integrated Applied automation software

Challenges

Semiconductor manufacturers are under constant pressure to reduce manufacturing costs, increase yield, improve quality and decrease production cycle times. To ease this pressure, an MES is needed to plan, direct and monitor very large manufacturing operations while efficiently managing data transfer from business systems. Such systems must meet demanding operating requirements, provide flexibility and reliability, support extensions and integration, and be scalable to support extreme levels of production.

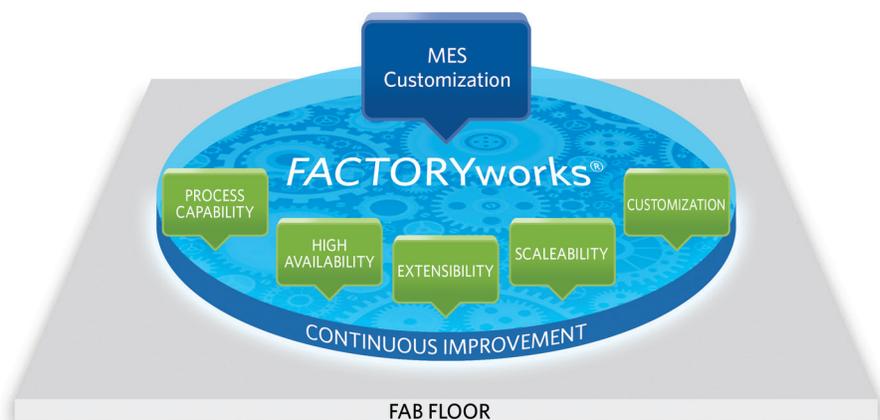
Numerous MES solutions are available, but many lack scalability for high volume and are unproven in complex automation. In addition, in-house MES solutions and legacy systems have a high cost of ownership, are difficult to maintain and are not equipped to handle factory expansion or multiple factories.

Solution Description

Applied FACTORYworks is a fully integrated, stable manufacturing execution system that manages and monitors highly automated manufacturing operations in semiconductor and related industries. It provides a fully integrated system for work-in-process (WIP) and equipment tracking, lot dispatching, process plan management, engineering data collection and tool automation.

Unlike many MES solutions, which have limitations in scalability for high volume and high cost of ownership, FACTORYworks can run in a low cost environment (such as Linux) while enabling users to build custom solutions with factory-specific working templates. It offers a stable and proven MES solution that is capable of supporting high volume manufacturing environments (>100K wafer start per month) without downtime while also maintaining low cost of ownership.

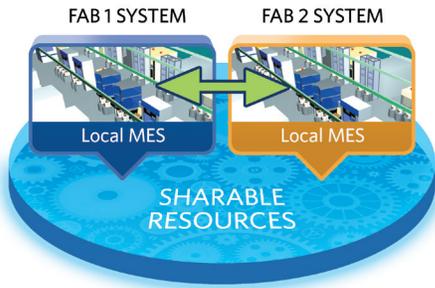
RULE DEVELOPMENT ENVIRONMENT. FACTORYworks offers a rule-development environment to ease deployment and maintenance. You can customize, extend or integrate server modules; you can even integrate various modules in an application suite. It's easy to replace and extend the supplied business rules, and you don't need to perform compilations every time a core product changes.



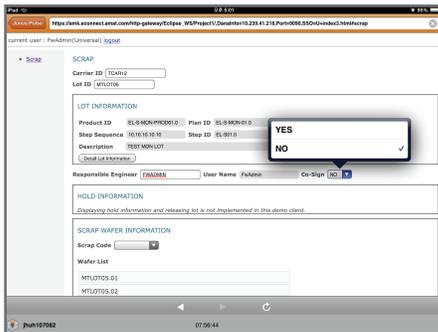
FACTORYworks enables continuous improvement by giving customers the ability to develop their own extensions for special features, business rules and external system integrations.

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With FACTORYworks, sharable resources such as machines, material and methods can be shared by multiple manufacturing lines to reduce manufacturing cost.

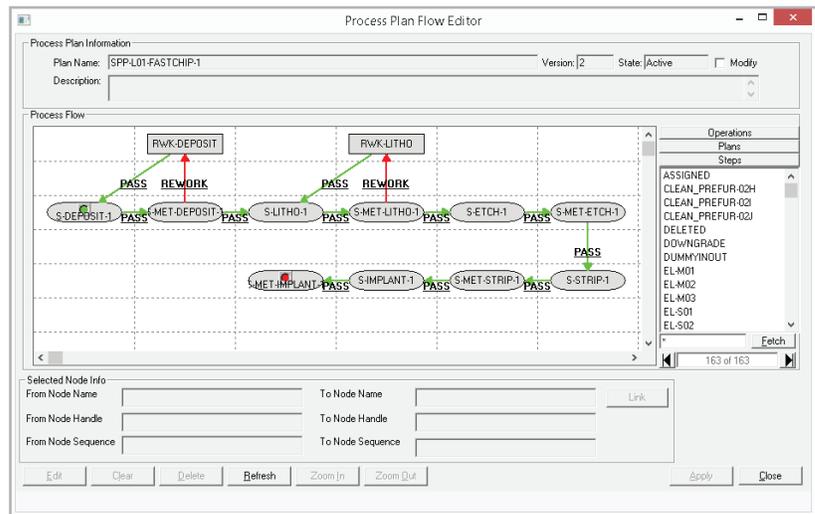


FACTORYworks is capable of providing a Web-based operator client that shows manufacturing data in real time. This example shows a scrap lot screen that enables operators to enter how many wafers to scrap and a reason for the scrap action.

FACTORYworks Capabilities for Achieving Continuous Improvement

Current Challenges	FACTORYworks Solution	FACTORYworks Advantage
Support for multiple facilities with a limited set of resources and tight budget	Multi-site track and trace	Provides scalability by handling factory expansion, multiple factories, and lines with the most extreme throughput requirements.
Unscheduled downtime and downtime for scheduled activities	High availability architecture	Provides a three-tier client server architecture that supports multiple server copies to meet increased processing demand and prevent unscheduled downtime.
Limited platform support	UNIX and Linux-based options	Supports multiple platforms to reduce cost of ownership for hardware purchases and ongoing maintenance.
Difficult to extend data and rules specific to a site	Configurable modeling	Provides workflow management at each process step using customized business rules that reflect the specific manufacturing process needs and requirements of your business.
Support for specific manufacturing requirements and external application communication	Functional process capabilities and integration	Supports specific manufacturing operation requirements; to expand capabilities, FACTORYworks integrates with Applied's automation software including Xsite™, E3™, APF RTD®, APF Activity Manager™, and CLASS MCS 5™.

PROVEN TRACK RECORD. FACTORYworks is currently running in mission critical applications around the world, where 24x7 availability and 99.9% uptime are basic requirements. It has a long track record—greater than 10 years—with demonstrated success at over 25 active sites. Customers report high reliability, and consistent stability and performance.



From the Process Plan Flow Editor, users can easily design process flows for material movement and efficiently manage standard and abnormal processing scenarios.