



Applied SmartFactory® MES FACTORYworks+™

An out-of-the-box manufacturing execution system designed for semiconductor back-end (assembly, test, and packaging) and adjacent industries, built on the highly-scalable FACTORYworks framework.

INDUSTRIES

- Semiconductor assembly, test and packaging
- Semiconductor-adjacent discrete product
- Roll-to-roll processing

FEATURES

- Integrated with SmartFactory portfolio
- Continuous, real-time work-in-process (WIP) tracking
- Material consumption and equipment tracking
- Assembly via configured bill-of-materials of inventoried parts and work-in-progress parts
- Grading of product based on quality test results
- Configurable time constraints by location for inventoried materials
- Usage-based state model for carriers and equipment tooling
- Graphical flow editor for process plan modeling
- Modeling data loader/extractor minimizes manual configuration efforts

BENEFITS

- Enables processing via various levels of factory automation
- Highly customizable framework
- Easily scalable with factory growth
- Minimize misprocessing due to manual error
- Improve product quality and manufacturing efficiency

CHALLENGES

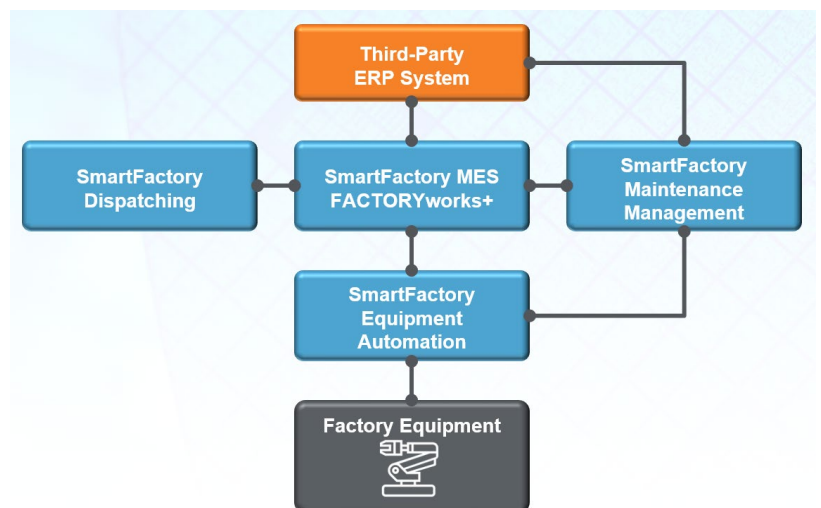
In many factories, production monitoring is managed through internally developed software or paper-based tracking systems, without a factory-wide automation framework. This makes it nearly impossible to efficiently track day-to-day product quality, output and cost.

As emerging technology factories grow in size, cost and technical level, the need to enable Industry 4.0 increases. The complexity of factory automation presents challenges that are typically insurmountable for internally-developed systems and impossible without a modern MES. In order to meet challenging yield and profitability targets, the following considerations must be examined: the ability to scale existing factory control systems to manage higher production levels across multiple lines, maintaining product quality and yield as business grows and the ease of implementing advanced automation functionality as growth occurs.

SOLUTION DESCRIPTION

SmartFactory MES FACTORYworks+ is an out-of-the-box manufacturing execution system developed for semiconductor back-end and semiconductor-adjacent industries. Based on Applied's leading FACTORYworks MES technology proven in semiconductor and semiconductor-adjacent manufacturing facilities worldwide, FACTORYworks+ is a versatile manufacturing execution solution that can be augmented using several modules from Applied's SmartFactory CIM portfolio.

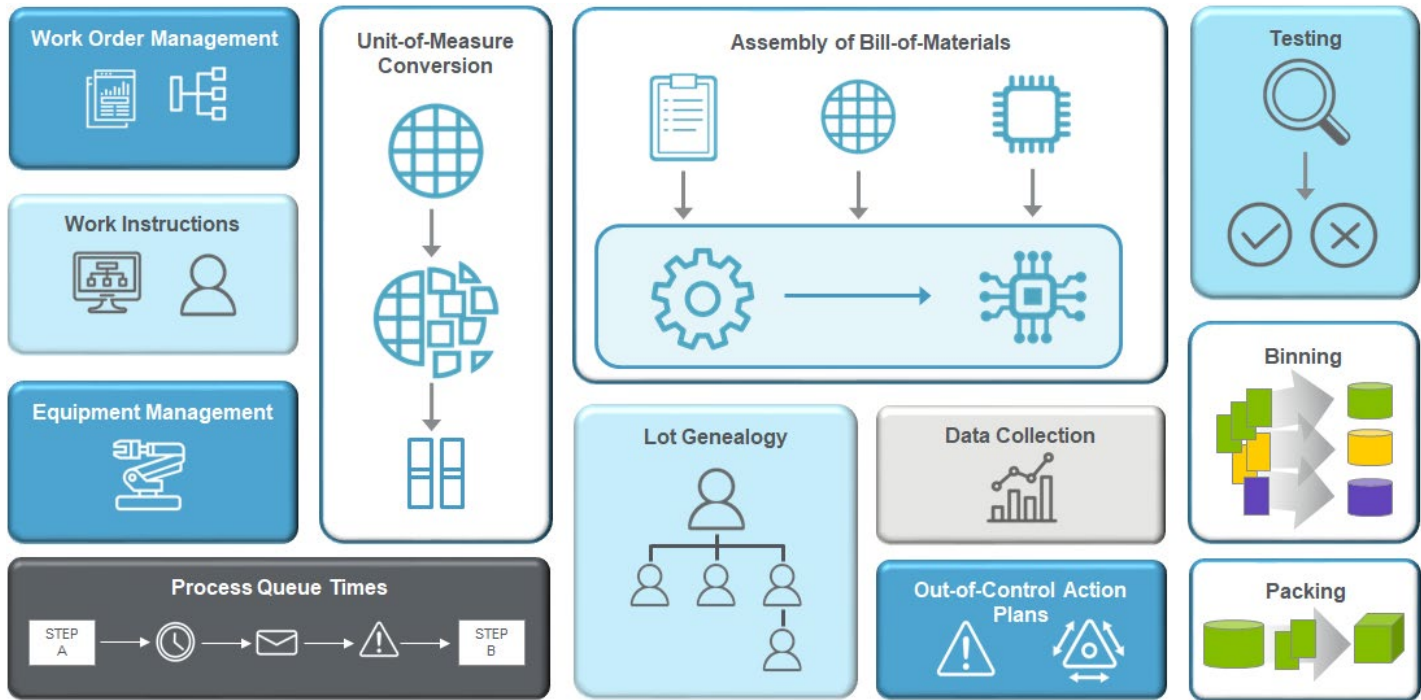
Simplified Architecture Diagram



Interface Between ERP, Equipment & Common CIM Modules

SMARTFACTORY SOLUTIONS WITH ENGINEEREDWORKS®

EngineeredWorks is Applied's pre-built automation logic that executes on a proven Applied platform. EngineeredWorks increases speed-to-value for customers and provides quicker deployment times. When deploying SmartFactory MES FACTORYworks+ with EngineeredWorks, customers can cut deployment times by more than **50%** compared to custom deployments.



Learn More About Applied SmartFactory



PACKAGE CONTENTS

MES FACTORYworks+ includes MES FACTORYworks 3 modules to enable:

- WIP tracking
- Equipment Management
- Operator Access Control
- Bill-of-Materials Management including Inventoried Parts
- Enterprise Integration Gateway
- Site-specific Customization (server-side business rules and custom data tables)

SOFTWARE

- SmartFactory MES FACTORYworks 3
- SmartFactory MES FACTORYworks+
 - FACTORYworks+ Solution Features with Sample Data
 - FACTORYworks+ Runtime User Interface
 - FACTORYworks+ Modeling Loader/Extractor

SERVICES, TRAINING AND SUPPORT

- On-site deployment
- Training provided for process engineers, operators, and IT engineers