

Waiting for information?

## Manufacturing Execution System

Answers for industry.

**SIEMENS**



SIMATIC IT



SIMATIC Plant Intelligence

Market reactions in shortest time!

## Integrated information across all levels

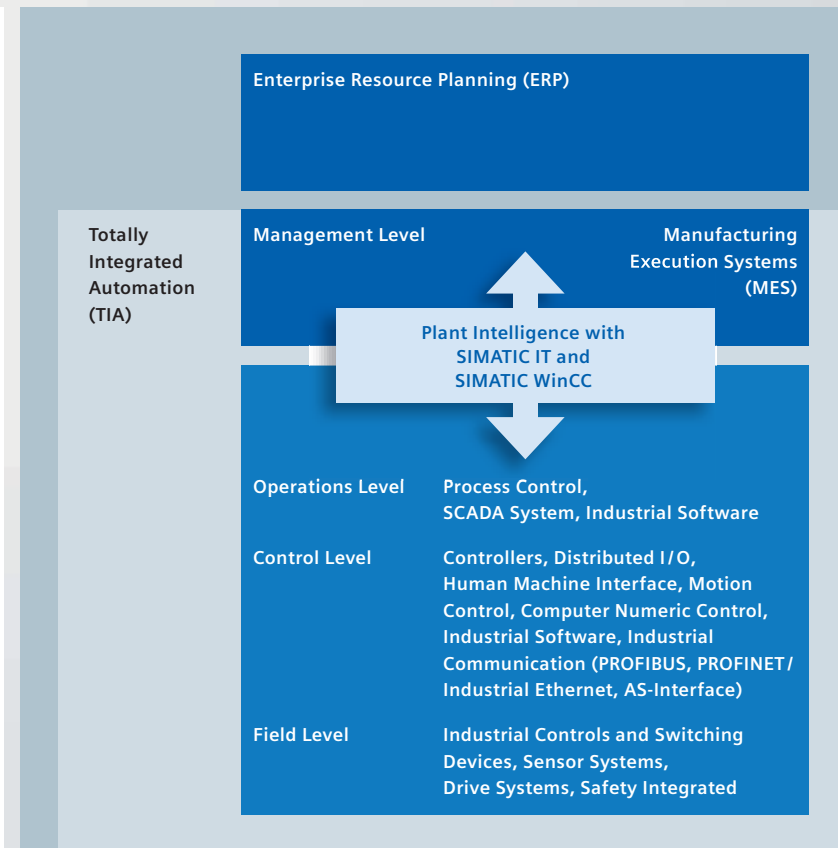
Highly dynamic markets and challenging performance demands make efficient data handling in integrated production plants a key factor for success. The best way to meet these demands is with a holistic and scalable Manufacturing Execution System.

Competition is tough, product life cycles are short, customer demands are rising, as is cost and pricing pressure. How can you make sure your enterprise and supply chain management are as flexible as possible and meet highly dynamic market demands? The answer is consistent end-to-end solutions to integrate data across all levels of your company.

**Holistic and scalable**

This is where Manufacturing Execution Systems play the important role and our unique MES ensures just that. Based on the concept of Totally Integrated Automation (TIA), it offers integrated components from field and control level to operations and management level and thus ensures optimal manufacturing and market responsiveness.

What makes the Siemens MES unique are its scalable concept and upgrade options providing you with a high amount of flexibility when adapting your MES solution to your needs. On the one hand, with Plant Intelligence on SIMATIC WinCC level you may start your system on the automation level by visualizing production data. An easy upgrade to SIMATIC IT for full decision-making expertise across the entire enterprise is possible at any time. On the other hand, depending on your specific requirements you may just as well enter the MES world with SIMATIC IT or Plant Intelligence on SIMATIC IT level and benefit from perfect collaboration of all IT-levels right from the start with an MES that owns the manufacturing workflows where decisions mostly affect profitability. So, there are two ways to dive into MES by Siemens – surely one of them will fit your requirements.



# Highest manufacturing and market responsiveness

The Siemens MES with SIMATIC IT is an optimization solution that is scalable and holistic. It fulfills different requirements of IT levels on the manufacturing automation and the corporate management level of your plant. For highest manufacturing and market responsiveness.

Highest productivity at all times – this is a priority that goes for both corporate management and the production automation level. This means that in the growing complexity of the manufacturing environment, MES is no longer only providing best practice solutions for one level or the other, but has to guarantee seamless data collaboration along the entire supply chain.

## **Market responsiveness for corporate management**

To be successful in highly dynamic markets and to be able to increase your own market competitiveness as a decision maker on corporate level you must rely on highest production speed, and decision making processes that lead to

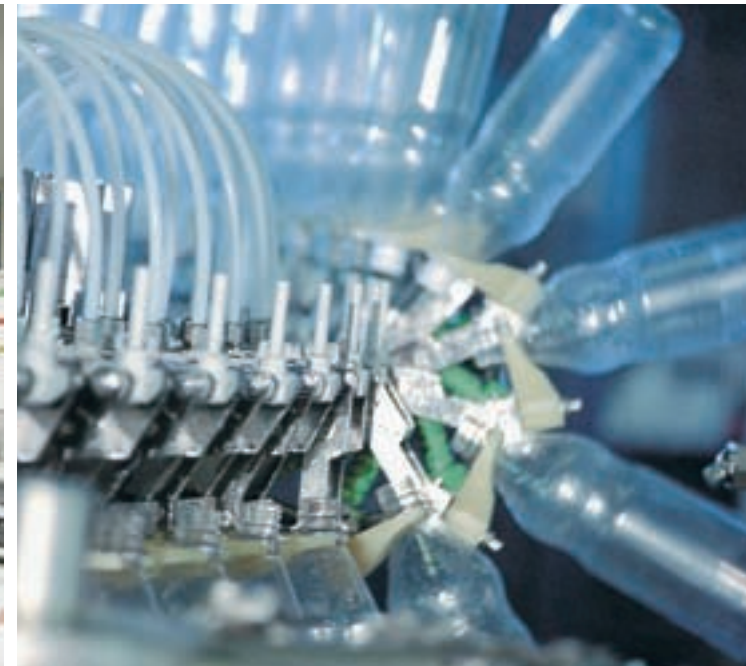
fastest time to market and absolute data transparency. This is exactly how Siemens MES with SIMATIC IT ensures best market responsiveness.

### **Manufacturing responsiveness for production**

For all operations in your plant's process level you have to be able to count on highest plant productivity at all times, outstanding plant performance, efficient resource planning and real-time data availability. This way you can be sure your manufacturing automation can respond to whatever customers and markets may have in store. Another advantage our MES has to offer – best manufacturing responsiveness.



Being successful in highly dynamic markets demands best market responsiveness.



Siemens MES with SIMATIC IT and Plant Intelligence on SIMATIC IT level will let you easily recognize and launch new opportunities both internally and in the marketplace.



## Why choose Siemens?

Aside from the uniquely open and scalable architecture that ensures quality for all plant levels the comprehensive MES offering by Siemens has many key factors that distinguish our solution from the rest. They are the reasons why our customers choose Siemens.

Smart data teamwork compared to just data documentation results in fastest reaction times.

When you are relying on a Siemens MES you are relying on the market leader in automation. Our many years of experience in the field have given us the technological knowledge we need to offer you an MES that collaborates with enterprise resource planning, sales, customer relationship management, product lifecycle management, supply chain management, finance, maintenance, logistics, quality assurance and all the other factors that provide functions to fulfill corporate business processes.

### **High performance and fastest reactions**

Our consistent market leadership is a sign for proven high performance in the entire realm of automation as well as in various

industries. This benefits extraordinary production speed and fastest reaction times on your side. So, you can be sure data is always available in real-time when you need to react to changing demands faster than the competition to stay ahead.

**Integration, compatibility and interoperability**

MES with SIMATIC IT is part of the world of Totally Integrated Automation – vertical and horizontal integration is the core of both. Integrated strategies for regulatory compliance and guaranteed data compatibility and interoperability across the production process connect all processes in your enterprise and make them entirely transparent.



Perfectly fit to your needs.



Idle times ...



SIMATIC IT



SIMATIC Plant Intelligence

... or seamless integration.

## A modular system that meets all needs?

Because of varying requirements in the process and discrete industries we have designed our MES as a modular building block system. With the core pieces SIMATIC Plant Intelligence for the plant level upgradeable to SIMATIC IT for the production and management level, and a broad spectrum of optional components the system can be adapted to your needs.

From SIMATIC Plant Intelligence to SIMATIC IT, our MES is a modular solution that meets the demands of modern manufacturing markets – with scalable client/server systems for process visualization, IT and business integration and a broad spectrum of optional components for expanding performance.

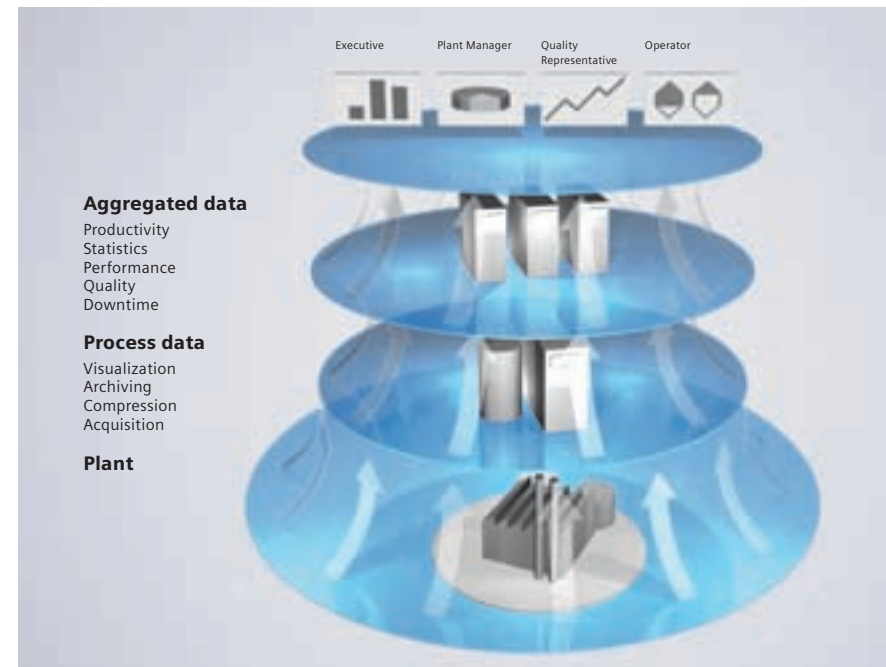
#### **A seamless advance from entry level to MES level**

This modular system enables a seamless advancement from a scalable entry-level system on the basis of the process visualization system SIMATIC WinCC up to a comprehensive optimization solution on the MES level with SIMATIC IT.

#### **Plant Intelligence based on SIMATIC WinCC**

Plant Intelligence based on WinCC enables smart utilization of data to generate important information in real-time on plant level. This procedure lowers plant costs, prevents scrap, better utilizes production facilities and ultimately assures higher efficiency and effectiveness.

SIMATIC IT and its modular building block system of suites are all rigorously based on the ISA-95 international industry standard. All SIMATIC IT solutions offer graphic user and programming interfaces, and can be modified in size and scope at any time to meet growing needs. Moreover, SIMATIC IT operates homogeneously with all commonly used ERP systems – for a rapid return on investment and a high degree of investment security and flexibility.



Optimizing production performance demands for optimal manufacturing responsiveness. Siemens MES with SIMATIC IT and SIMATIC Plant Intelligence starting on the WinCC level is the perfect combination.

## Three suites: compatible, flexible, scalable

We have structured our IT offer into three suites – they cover everything from connecting ERP to process automation, evaluating data in real time, and optimizing research and development processes to speed up the introduction of new products.

### **SIMATIC IT Production Suite – Real-time capabilities to drive performance**

SIMATIC IT Production Suite is the plant-centric IT solution covering all manufacturing needs. It bridges the gap between business systems (e.g. ERP) and process and factory automation systems, causing an increase in efficiency at the plant and within supply chain operations. It consists of predefined and easily configurable modules, bundled in our SIMATIC IT Framework and SIMATIC IT Component offerings. With this modular approach, SIMATIC IT Production Suite allows maximum flexibility and efficiency when customizing and adapting your solution, during the operation phase and during your next expansion.

**SIMATIC IT Framework** provides the framework for implementation of SIMATIC IT based on your plant model. Processes can be easily and transparently mapped thanks to predefined IT environments and intuitive graphic engineering capabilities. And third-party components as well as existing applications are easy to integrate.

**SIMATIC IT Components** covers all basic tasks in manufacturing and business processes with a broad range of basic components.

**SIMATIC IT R&D Suite –  
Innovation efficiency to enforce  
Brand Value**

Are you seeking ways to optimize your research and development processes and effectively reduce the introduction time of innovations and new products into the market? With our new SIMATIC IT R&D Suite you can already profitably apply SIMATIC IT functionalities at the laboratory scale. Experience the efficient streamlining of R&D and manufacturing processes, and the seamless transition of product data and definitions through the entire manufacturing process by integration of R&D data and workflows

with the manufacturing environment. From basic research through product development and specification to upscaling, all processes take place on the same platform and follow the same rules as your plant and your production processes.

The result? Less interface losses between development and production, reliable documentation, and faster approval of new products.



With SIMATIC IT, Siemens is broadening the scope of MES. Plant IT solutions must be based on a strong technology platform, compatible with the enterprise's IT infrastructure, flexible and scalable.



### **SIMATIC IT Intelligence Suite – Manufacturing Intelligence for cross plant visibility**

Greater transparency, performance and productivity throughout your plant or networked facilities? If this is what you are looking for, then this is your suite. SIMATIC IT Intelligence Suite makes the real-time enterprise possible, translating critical, real-time manufacturing information into business-level key performance indicators (KPIs). These KPIs are consistent, user-specific and non-redundant and therefore result in maximum information quality and process efficiency. Hence, by evaluating

data in real time and comparing it to values from the entire manufacturing lifecycle this suite defines the natural evolution of SIMATIC IT in the business level.

The SIMATIC IT Intelligence Suite will turn into a valuable decision-making support and it maximizes the transparency of the entire production process – in real time.

To achieve coexistence of best-in-class functionality, integrated workflows and configurable flexibility, SIMATIC IT Production Suite is based on a framework and component approach.

**SIMATIC IT Components –  
A broad range of functionality that  
makes the difference**

Thanks to its modular design and scalability, the size and performance of SIMATIC IT can be easily adjusted to the current requirements of your plant at any time. This broad range of functionality turns into differentiating benefit for our customers. The following special components are currently available:

**SIMATIC IT Historian –**  
the management system for process and production data (PIMS)

**SIMATIC IT Unilab –**  
our integrated laboratory information management system (LIMS)

**SIMATIC IT Interspec –**  
the comprehensive control system for product specifications

**SIMATIC IT XHQ –**  
our smart operation intelligence management system



All processes perfect.



## Focus on process industries

To maximize customers' return on investment, we continue to deepen our understanding of specific customer and industry requirements, adapting and finetuning our MES offering accordingly. Industry-libraries provide a set of SIMATIC IT Best Practice templates especially configured for the process industry and its specific niches.

### **Safe, compliant and flexible – from design to delivery**

The process industry is forced to constantly optimize its operating and production processes because it faces constantly changing market requirements and rising cost pressure. In addition, the industry must maximize availability and efficiency in all plants, and systematically reduce time to market for their products.

SIMATIC IT delivers the best possible basis for achieving these goals with a wide spectrum of standardized and modular components. It does not only optimize production and business processes, but also makes your entire enterprise more flexible.

We interact closely with in-house industry-specific experts who provide us with very detailed industry-specific knowledge. This knowledge is then again incorporated into an Industry-Specific-Library, addressing the typical pain points of a specific industry.

#### **The benefits of SIMATIC IT**

- Greater flexibility and efficiency with open standards
- Complete integration of regulatory and quality demands
- Synchronized production processes for optimal supply chain management
- Sustained reductions in operating costs
- Higher performance by systematically tapping hidden capacities



SIMATIC IT optimizes processes, offers automated work and information flows, built-in quality and compliance support and comes with functionalities tailored to the specific needs of manufacturers in the process industry.



## Focus on discrete industries

By specializing our MES offer to the specific requirements of manufacturers in the discrete industry our systems create more manufacturing visibility and real-time data acquisition in order to better manage plants and product quality.

Maximum plant transparency not only optimizes assembly lines, but also enables the measurement and management of manufacturing assets, and provides the necessary information for making effective business decisions.

### **Higher cost efficiency and performance for your production**

You know the growing challenges that discrete industries face: New markets, new materials and new products demand sustained increases in plant efficiency and productivity as well as greater flexibility throughout all production processes.

SIMATIC IT offers customized components for the specific task of discrete industries – with a clear focus on job control, tracking and tracing, quality management, plant floor process control as well as traditional solutions for manual monitoring and control of production processes.

In addition, the system can centralize all information to model a test plan, record the test results, and store them for later analysis and reporting. All activities are coordinated and documented, available to other plants or labs, offering extensive decision support in case of non-compliant results.

#### **The benefits of SIMATIC IT**

- Regulatory compliance
- Increased efficiency to gain market share in global and mature markets
- Strong base for product innovations for both mass and niche solutions

- Real-time decision support driven by interoperability, seamless RFID integration and an advanced Service Oriented Architecture (SOA)
- Enabling just-in-time/just-in-sequence manufacturing; supporting cost management
- Efficient routing, tracking, genealogy and corrective actions for increased transparency and plant visibility
- Modelling all quality processes and systems to integrate with manufacturing infrastructure
- Statistical process control functionality and data contextualization for strong decision support

# A holistic solution – and everything that comes with it

SIMATIC IT is scalable and easily upgradeable, available in different suites, adaptable to all industries and part of Totally Integrated Automation (TIA). In addition, a network of certified partners individually configures and maintains your system.

We know that despite extensive standardization, every MES solution must still be individually configured, implemented and maintained. That's why we work with certified partners for service and sales around the world. For you, that means the best possible consulting and service, on site, around the clock, and if needed throughout the entire life cycle of your solution.

## Siemens Solution Partners

Our partners are certified system integrators with comprehensive knowledge of technology and process engineering. We cooperate with them very closely, qualification occurs on a regular basis and knowledge is exchanged frequently. This ensures high quality of initial services you receive

for your MES and effectively secures your investment. Thanks to the global expertise of our Solution Partners, you can be sure that your MES is configured to precisely fit your needs.

## Siemens Service and Maintenance

Our service and maintenance teams know both process and discrete industries – this is how we can design our spectrum of services to your specific requirements. With proven Technical Support Services around the clock or proactive services that prevent product and system failures by performing real-time monitoring and remote maintenance we make sure your system's availability is high without exceptions.

**A holistic system as an integral part of a holistic concept**

TIA, the integrated basis for implementation of customized automation solutions, is characterized by its unique continuity. It provides maximum transparency at all levels with reduced interfacing requirements – covering the field level, production control level, up to the corporate management level. As part of the TIA world SIMATIC IT is based on rigorous standardization of interfaces, clear ISA-95 compliant structuring and hierarchization in its programming, and long-term compatibility with both Siemens components as well as third-party products. This not only ensures a seamless flow of information across all company levels, but enables

the integration of all processes that play an essential role for your success – from purchasing through production to sales, and from the lab through energy and heat supply to building security. This is the highest level of comprehensive integration, a level only Siemens can offer.



Highest level of comprehensive integration.

## Get more information

[www.siemens.com/plant-intelligence](http://www.siemens.com/plant-intelligence)  
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