SIMATIC IT Historian

Increase your efficiency

SIMATIC IT Historian

Answers for industry.

SIEMENS

SIMATIC IT Historian:
Clear Information at every level Supporting Decisions and Monitoring Efficiency

Today's business environment requires manufacturers to become ever more flexible and responsive to customers' requirements. Manufacturing software technology is the core enabler to reach this goal. SIMATIC IT, the Siemens Manufacturing Execution Systems offering, links into the control layer and transforms data coming from various systems into the right level of granularity, as well supporting smooth manufacturing operations, ensuring all the key functions needed to benchmark performance and increase flexibility for optimum plant responsiveness. SIMATIC IT Historian enables improved productivity and performance, while at the same time optimizing the production life cycle cost.

With SIMATIC IT, Siemens offers a broad range of functionality in the Manufacturing Execution System area with a unique composition of components. Siemens is at the same time a market leader in shop floor automation systems with a range of products from pure sensors up to PLCs, DCS, and HMI. The Totally Integrated Automation Concept combines this strong offering and provides seamlessly integrated and scalable solutions.

Improving Productivity across the Enterprise
Data Collection, Aggregation and Contextualization

When it comes to meeting manufacturing requirements, it is clear that Data Management is a key topic. SIMATIC IT Historian, part of SIMATIC IT Production Suite or as a standalone Plant Performance Analysis – Plant Information Management System, is a collection of software functionalities specifically addressing data information management issues.
It is able to collect, archive, group, aggregate, validate, contextualize and manipulate process information from a variety of real-time historical and diverse back-end data sources - automation systems, SCADA systems, Laboratory Information Management Systems and relational database systems – in order to enforce and support Quality Assurance, Reporting, Certifications, Statistical Analysis, Performance Monitoring, etc.

SIMATIC IT Historian makes shop floor information:

• **Accessible**
• **Meaningful**
• **Consistent**

Thus providing optimum decision support for exception handling or to improve performance, based on KPI (Key Performance Indicators) calculations against manufacturing events or resources.
KPIs can be associated to production orders, equipments, process segments, batches, personnel, etc., to provide a clear and understandable image of the manufacturing status to the whole company, from the Shop Floor level up to the Business level.

Benchmarking Performance
Production Analysis

SIMATIC IT Historian provides native components to analyze data in a time-oriented way or contextualized against manufacturing events.

Production Performance under control
KPI Management

With SIMATIC IT Historian, all data collected and aggregated from different sources can be contextualized to relevant production events, such as Production Operations, Process Segments, Orders, Batches, etc.

Data contextualization maintains the relationships between specific production events and ranges of time-series data, product quality data and yield data, or any other Key Performance Indicator.

SIMATIC IT Historian, in conjunction with SIMATIC IT Production Suite automatically traces production events, and collects/calculates KPIs according to such events, automatically building the relationships between different sets of data.

Client Access
Data analysis in different contexts

The capability of providing the right information at the right moment to the right users makes a huge difference in the efficient handling of manufacturing operations. SIMATIC IT Historian provides different tools to supply, dispatch and analyze the data stored:

• Historian Data Display contains four different viewers: Trend viewer, Message viewer, Bargraph and Production viewer. Thanks to these different views, the data can be analyzed from different perspectives

• With the Excel Add-in functionality, data are displayed within Excel spreadsheets, simply configuring queries by means of a wizard. This allows customization to even more specific information needs

SIMATIC IT Historian data and controls are integrated into Client Application Builder, the SIMATIC IT environment to build web-based Graphical User Interfaces. It provides a platform to easily develop MES client applications by providing both a uniform data retrieval strategy to access the different types of data sources and a set of tools for the development of project specific data aggregation logics.
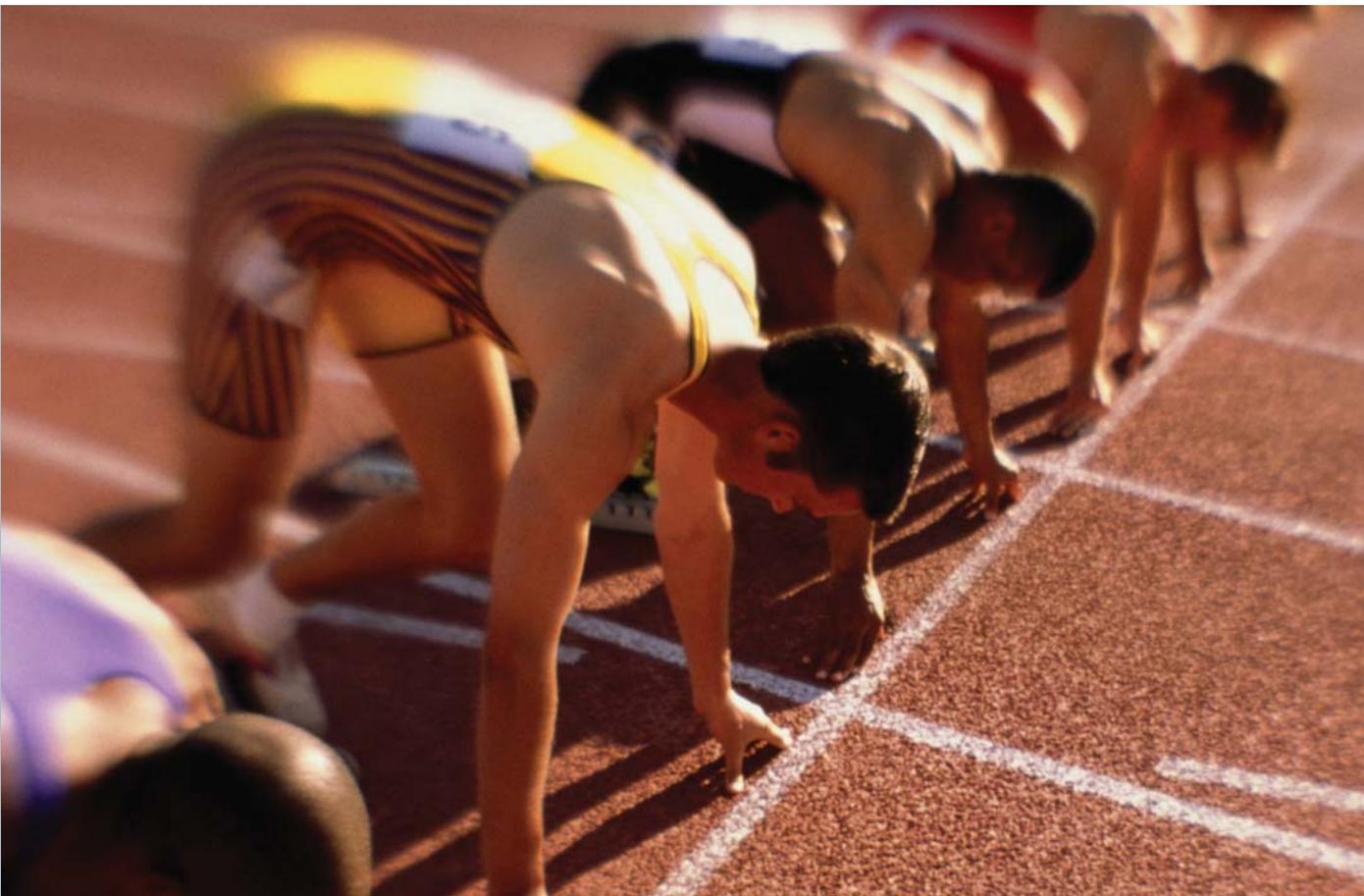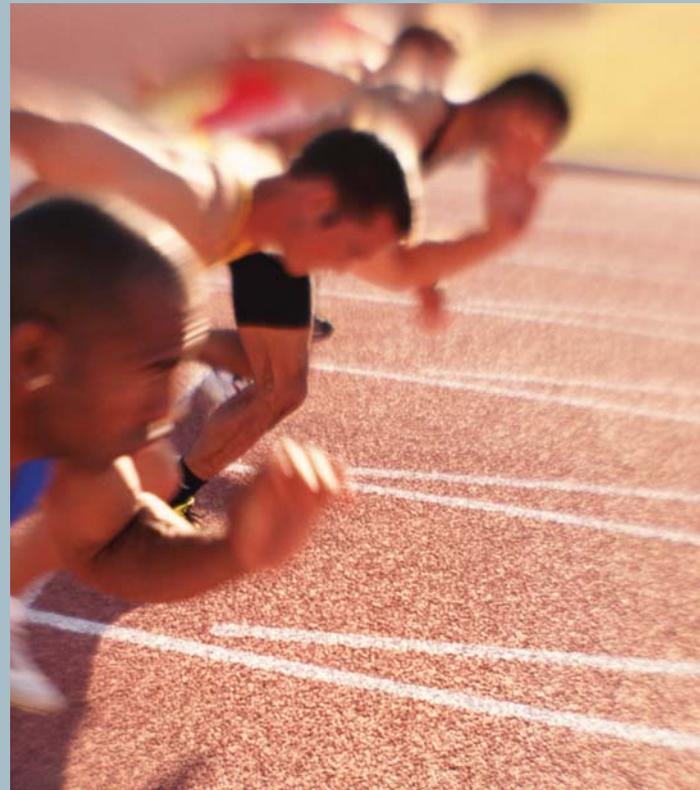
Full compliance to the ISA-95 standard
Standard integration of enterprise and control systems

SIMATIC IT Historian not only covers all the data collection and analysis related functionality definitions of ISA-95, but also actually uses ISA-95 as a blueprint for its architecture.

Support strict Regulations
Compliance to Regulations and Normative Practices

A special extension of SIMATIC IT Historian supports compliance with the FDA's 21 CFR Part 11 regulation about Audit Trail and Electronic Signatures, allowing to build a compliant application.

Long Term Archive
Data Preservation for future access and use

SIMATIC IT Historian provides a long-term archive concept. It allows archiving on an external database in order to prevent the need to maintain all data online.

Reporting
Distribution of Information to every user

SIMATIC IT Historian is fully integrated with SIMATIC IT Report Manager. This component provides an object model that can be used to easily retrieve data and build reports, referring to Tags and Key Performance Indicators, Batch Data, Alarms and Events, and other Engineering Data.

SIMATIC IT Report Manager provides pre-defined reports and easily combines process and production data retrieved from SIMATIC IT Historian and other SIMATIC IT products, as well as third party systems or databases.

TIA Integration

Are you looking for potential productivity increases and sustained improvements in your competitiveness?

With Totally Integrated Automation (TIA), Siemens is the only supplier to offer an integrated foundation for implementing customized automation solutions, in all industries, from inbound to outbound logistics. A reduced number of interfaces provides for ultimate transparency at all levels, from the field and production levels up to the corporate management level.
Customers benefit from this integration throughout the entire life cycle of the plant, from the first steps of designing, through day-per-day operation, to modernization.
Here, the consistent development of Siemens products and systems ensures a high degree of investment security avoiding any unnecessary interfaces.
The unique integration is designated into every product early in its requirement definition.
Totally Integrated Automation forms the basis for customized solutions perfectly tailored for every industry and significantly boosting productivity while ensuring a high degree of investment security.

Plant Intelligence with SIMATIC IT
Scalability concept allows to gradually grow into MES

SIMATIC IT provides high integration and interoperability with all other TIA products, including Sensors and Actuators, Industrial Communication tools, SIMATIC S7 and PCS7 controllers, Motion Control products, Drive technology, HMI tools and more.
With the integration of Plant Intelligence applications from the machine up to the business level, Siemens is offering a complete and scalable solution from one source.
SIMATIC IT provides TIA integration with WinCC to merge MES and HMI layers into Plant Intelligence, a scalable and inexpensive solution from existing applications, providing transparency in the production through an efficient acquisition, archiving, aggregation, analysis and distribution of production data.

SIMATIC IT Historian options

Added value creation through controlling and speeding up production with best quality standards

SIMATIC IT OEE-DTM
Equipment Efficiency Control and Downtime Analysis

SIMATIC IT Historian can include as an option a Performance efficiency module. SIMATIC IT OEE (Overall Equipment Effectiveness) and DTM (Down Time Management) is measuring consistently the efficiency of all individual equipment in the plant, of every area and, ultimately, of the entire factory.
This approach allows to monitor and manage the lifecycle of manufacturing assets.

The OEE and DTM analysis are managed using the ISA-95 standard as a fundamental model. Production and Performance are measured through KPIs (Key Performance Indicators), metrics representing important values that that need monitoring.

KPIs are computed as a combination of several data, informations, and process values, aggregated against manufacturing events. The capability of keeping Produc-

tion Performance under control is a key factor for success in manufacturing. SIMATIC IT OEE-DTM is natively integrated with the entire SIMATIC IT solution and it has a strong impact on productivity and makes it possible to establish a relationship between performance measures and business objectives.

SIMATIC IT SPC
Integrating Quality Management Processes

SIMATIC IT Historian includes a Quality efficiency module to complete the functionality scope.
SIMATIC IT SPC (Statistical Process Control) is taking care of Statistical Process Analysis in a Manufacturing Execution System environment.

This innovative solution is provided as a product option of SIMATIC IT Historian, where particular attention is to full integration with other SIMATIC IT modules to achieve a complete package capable of satisfying MES and SPC needs:

– the two environments sharing production context data such as order, product, lot, shift, material, etc.
– fully integrating Quality Management capabilities in the process.

SIMATIC IT SPC collects data from the field, or arranges the collection of product samples either manually or using automatic acquisition through test equipments. These data are stored in a specific repository, in which they can also be retrieved, and where a number of calculation or aggregation functions can be optionally applied.

SIMATIC IT SPC allows to plot results in graphical and easy to interpret formats, allows comparisons to expected results and identification of violations of pre-defined control rules in the process. It activates signals of rule violations and triggers corrective actions. Moreover, tight integration with SIMATIC IT Libraries allows the product to be integrated with other functionalities varying from Sampling Data plan acquisition to Corrective Actions management.

Benefits

Increase your efficiency

- Optimization of production processes

- Decision support based on real time information

- Improvement performance visibility for proactive and timely decision making at each level

- Faster and better problem understanding and solving

- Reduction of production and maintenance costs by optimizing planning activities

- Improvement of quality performance and reliability

- Prevent unscheduled downtime and idle-times

- Support compliance to regulations and normative practices

- Improvement production performance reporting

- Reduction of paper based activities

- Maximization production equipment utilization

- Better asset utilization accelerating Return on Assets

- Contextualize inefficiencies against MES data: shifts, orders, lots, etc..

- Measurement the capability of the process to ensure a good production in a stable manner

- Corrective actions and alarm management

Get more information

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