Totally Integrated Automation in the Digital Enterprise

On the way to Industrie 4.0
On the way to the Digital Enterprise – with Siemens

The Internet is now a part of production reality – while posing great challenges for automators and manufacturers: How can I manufacture cost-effectively, faster, and flexibly, even with batch size of 1? How can I minimize my use of resources? How can I help my customers to meet these requirements?

Siemens shows the way by combining Totally Integrated Automation (TIA) with the Digital Enterprise Software Suite.

siemens.com/digital-enterprise

Holistic approach

1. Product design
2. Production planning
3. Production engineering
4. Production execution
5. Services

The Digital Enterprise Software Suite comprises the entire industrial production value chain as well as integrating the supplier network.
Siemens offers a complete portfolio for the Digital Enterprise

TIA and Digital Enterprise Software Suite

TIA is an integral part of the Digital Enterprise Software Suite. Today, Siemens is already offering an optimized platform for Industrie 4.0 processes with the Digital Enterprise Software Suite, which combines the benefits of Siemens’ Product Lifecycle Management Software with the proven properties of TIA via a shared database. In addition to horizontal integration, the Digital Enterprise Software Suite also offers vertical integration through the Manufacturing Execution System (MES), thus providing the necessary connection to the management level.

The benefits are obvious: Everyone participating in the process has access to the same consistent database where every change, every update, and every release is immediately visible and available to all.

This means a flexible production organization, shorter project execution times through simultaneous engineering, avoidance of duplication of effort, comprehensive process control, consistent data for quality documentation, integration of mechanics, electrical systems, and automation, and much more. You can enjoy the benefits of worldwide networking today – for example, by analyzing data in MindSphere – Siemens Cloud for Industry to optimize your repair and maintenance. The scenarios inside these pages show you which benefits TIA already holds in store for you as part of the Digital Enterprise Software Suite.

Visit our reference center to find out how our customers are using the Siemens TIA portfolio to implement their applications:
siemens.com/automation/references
Generate standardized program components in TIA Portal

- Easily generate programs for series machines
- Exchange data with upstream engineering processes in TIA Portal

Our offering:
TIA Portal
siemens.com/tia-portal

[1] Automatic execution of engineering tasks

[2] Product lifecycle management connection to automation engineering

Shared database for mechanics, electrical systems, and automation
- Central storage of data from all supplied machines
- Versioning and release of work status
- Worldwide collaboration among distributed team members

Our offering:
Teamcenter
siemens.com/teamcenter
TIA Portal/Teamcenter Gateway
siemens.com/tia-portal

Access to TIA Portal in a local cloud
- Reduced maintenance outlay for software installations
- Changes performed directly on site on the machine, even without programming device
- Secure access to the machine’s automation components

Our offering:
TIA Portal/Cloud Connector
siemens.com/tia-portal
Virtual commissioning

- "Commissioning in the office" instead of at customer’s plant
- Safe testing of control concepts using the model
- Prevention of damage to the real plant

Our offering:
TIA Portal/PLCSIM Advanced
siemens.com/tia-portal

Increased plant availability through
- Prevention or reduction of faults caused by attacks or malware
- Protection of system and data integrity to avoid malfunctions, production errors and downtimes
- Protection of confidential data and information as well as intellectual property

Our offering:
- Totally Integrated Automation
  siemens.com/tia
- Plant Security Service
  siemens.com/plant-security-services


Integrated energy management from planning to plant operation
- Intelligent linking of energy and production data
- Automatic generation of energy management program
- Seamless connection to the energy management system

Our offering:
- SIMATIC Energy Suite
  siemens.com/energysuite
- SIMATIC Energy Manager PRO
  siemens.com/energymanagerpro

[7] Data acquisition for Cloud Services

Global analysis of data by using MindSphere – Siemens Cloud for Industry
- Secure data connection between controller and MindSphere – Siemens Cloud for Industry
- Easy configuring of connection
- Performance monitoring of globally distributed machines

Our offering:
- MindSphere
  siemens.com/mindsphere
- SIMATIC Controller and Industrial PCs
  siemens.com/automation
The perfect combination: TIA and the Digital Enterprise Software Suite

- Reduced time to market due to shorter innovation cycles, even for more complex products
- Complete flexibility for volatile markets and individualized mass production
- Greater energy and resource efficiency
- Collaboration and standardization in interaction with suppliers

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