Totally Integrated Automation in the Digital Enterprise
On the way to Industrie 4.0

siemens.com/tia
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
Siemens offers a complete portfolio for the Digital Enterprise TIA and 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.

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Totally Integrated Automation in the Digital Enterprise

These scenarios will start you on your way to Industrie 4.0 today!

[1] Automated engineering

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

[2] Intelligent data management

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
Optimized machine functionality through 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:
Process Simulate
siemens.com/tecnomatix
TIA Portal/PLCSIM Advanced
siemens.com/tia-portal

[3] Virtual commissioning
Cloud-based engineering

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
[7] Preventive maintenance

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

[6] Individualized mass production

Increased product variance all the way to customization
- Connection of databases to the controller
- Simple engineering of database access
- Seamless transition to IT communication

Our offering:
- TIA Portal
  siemens.com/tia-portal
- SIMATIC ET 200SP Open Controller
  siemens.com/open-controller

[5] Integrated energy management

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
Siemens provides products and solutions with industrial security functions that support the secure operation of plants, systems, machines and networks.

In order to protect plants, systems, machines and networks against cyber threats, it is necessary to implement – and continuously maintain – a holistic, state-of-the-art industrial security concept. Siemens’ products and solutions only form one element of such a concept.

Customer is responsible to prevent unauthorized access to its plants, systems, machines and networks. Systems, machines and components should only be connected to the enterprise network or the internet if and to the extent necessary and with appropriate security measures (e.g. use of firewalls and network segmentation) in place.

Additionally, Siemens’ guidance on appropriate security measures should be taken into account. For more information about industrial security, please visit siemens.com/industrialsecurity.

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The information given in this document only contains general descriptions and/or performance features which may not always specifically reflect those described, or which may undergo modification in the course of further development of the products. The requested performance features are binding only when they are expressly agreed upon in the concluded contract.

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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