SIEMENS

Ingenuity for life

Totally Integrated Automation in the Digital Enterprise

On the way to Industrie 4.0

siemens.com/tia

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:

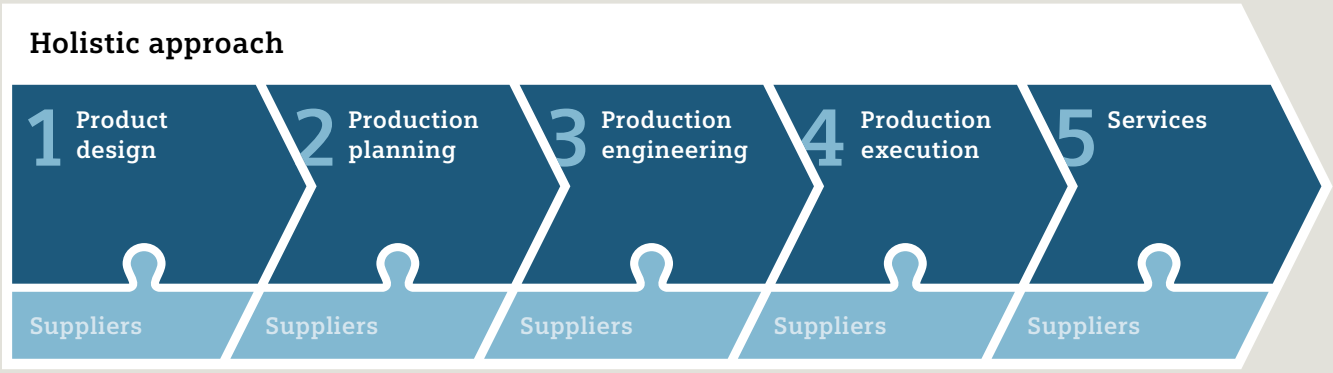
How can I manufacture cost-effectively, faster, and flexibly, even with batch size of 1?

How can I minimize my use of resources?

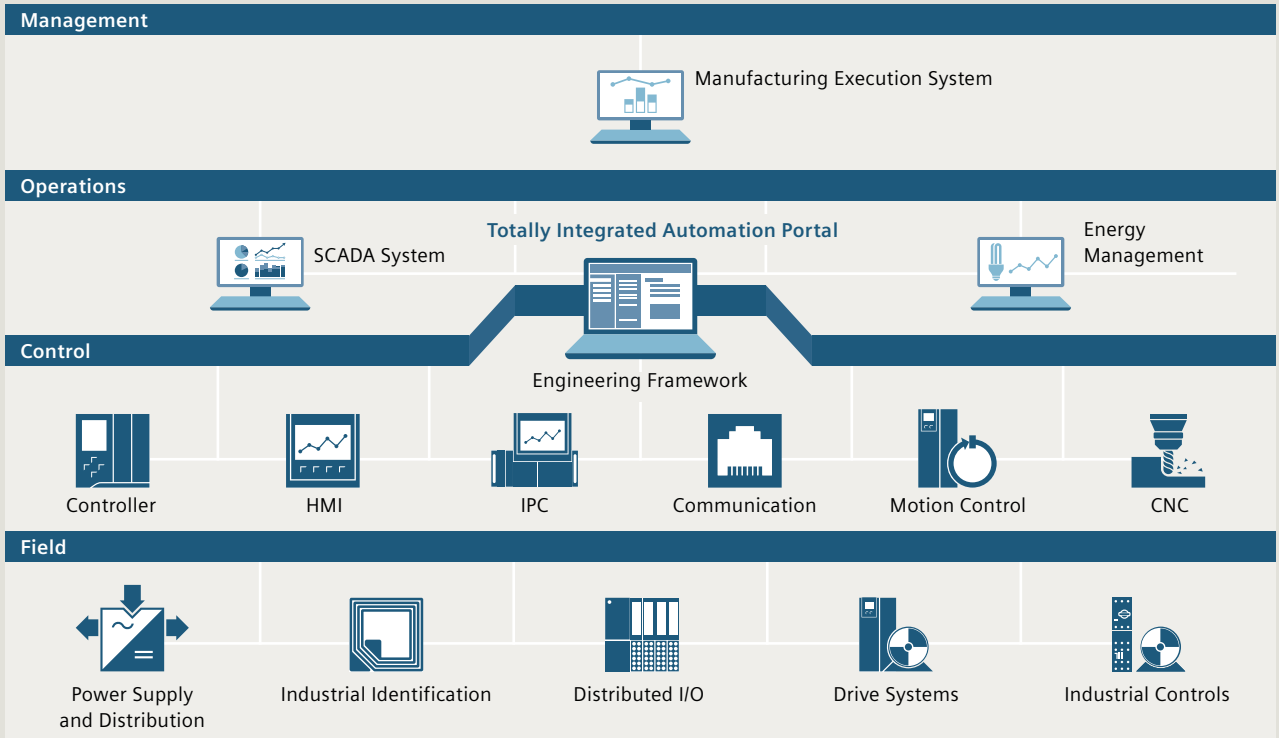
How can I help my customers to meet these requirements?

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

siemens.com/digital-enterprise



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.

siemens.com/tia

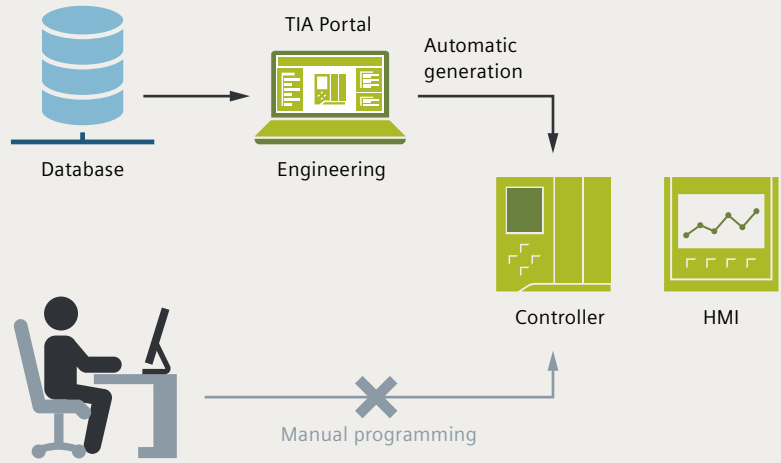
Protect automation components against cyber-attacks and unauthorized access and secure your expertise.

Find out more at siemens.com/industrialsecurity

Totally Integrated Automation in the Digital Enterprise

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

[1] Automated engineering

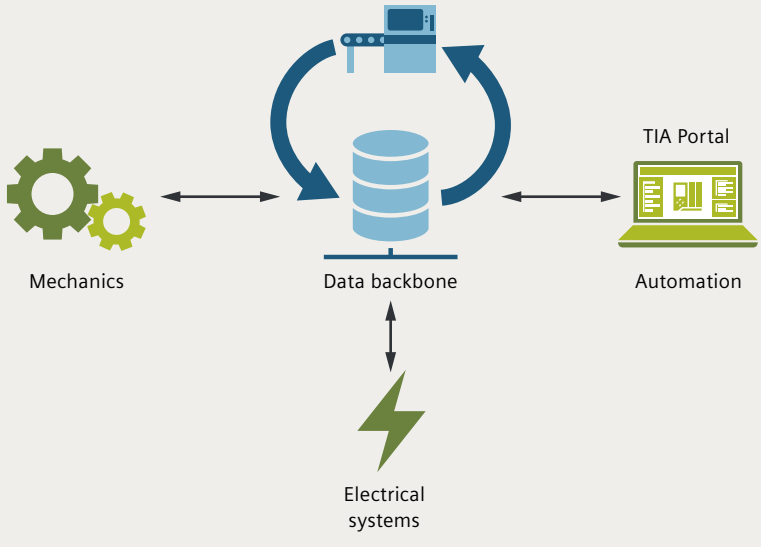


Generate standardized program components in TIA Portal

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

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

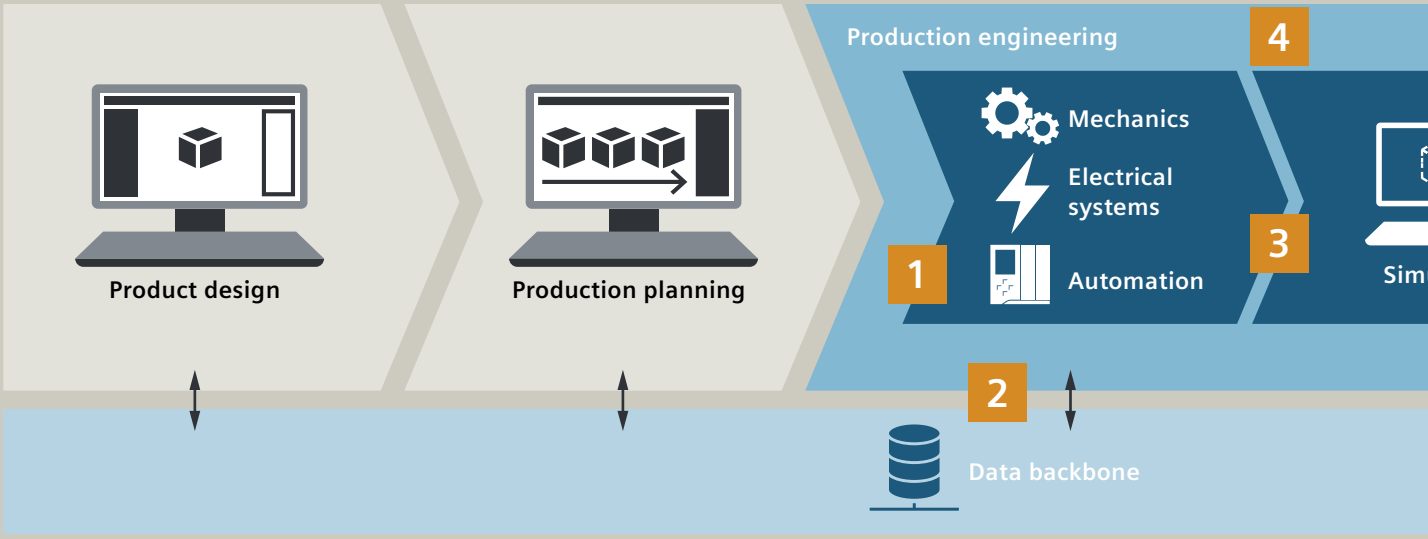
[2] Intelligent data management



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



[3] Virtual commissioning

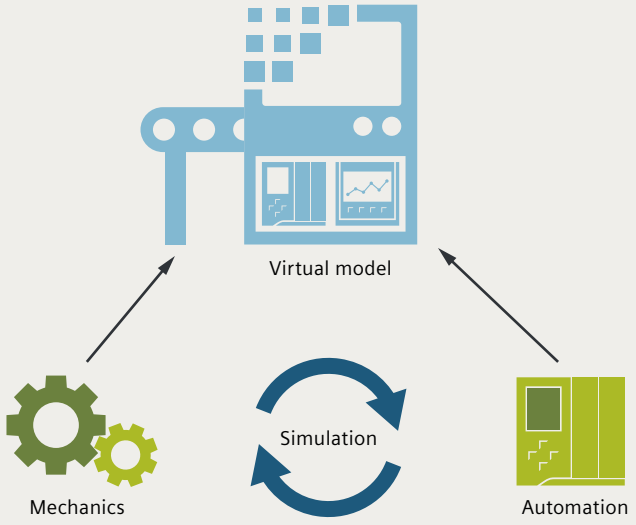
Optimized machine functionality through virtual commissioning

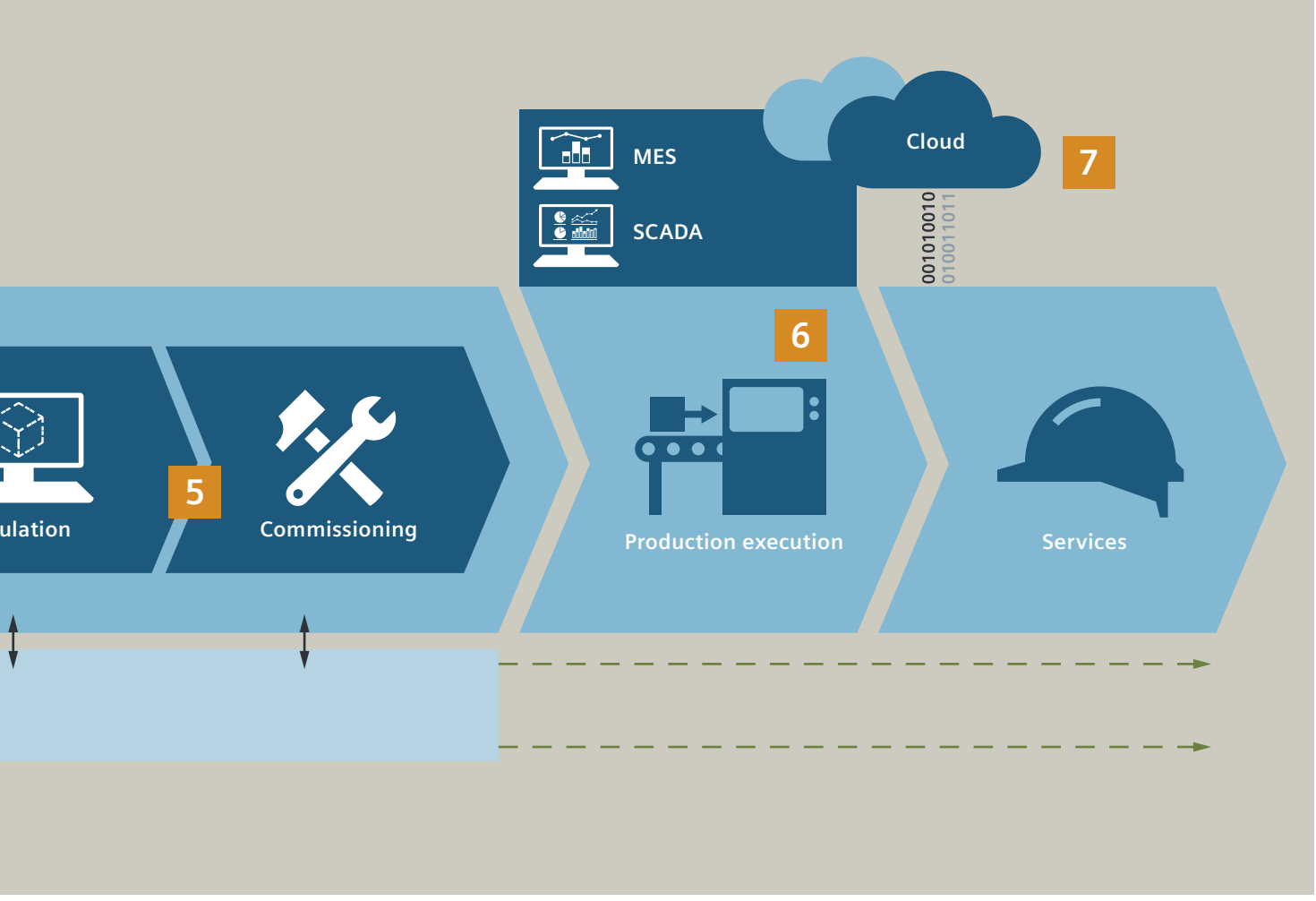
- "Commissioning in the office" instead of at customer's plant
- Safe testing of control concepts using the model
- Prevention of damage to the real plant

Our offering:

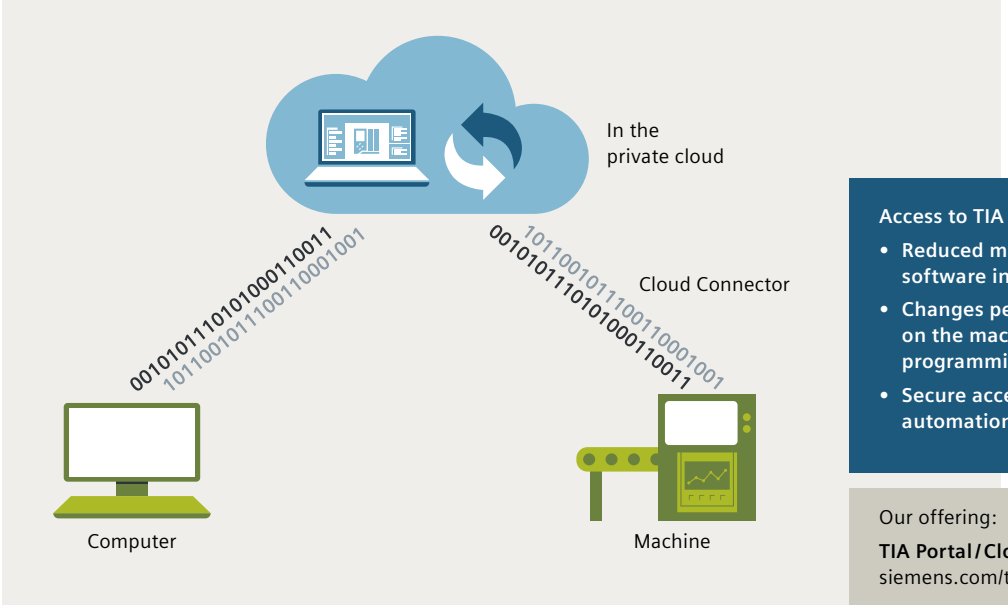
Process Simulate
siemens.com/tecnomatix

TIA Portal / PLCSIM Advanced
siemens.com/tia-portal





[4] Cloud-based engineering

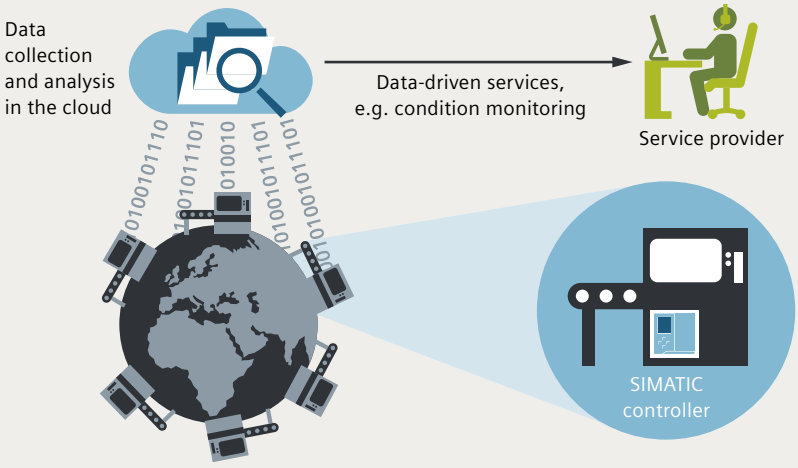


Access to TIA Portal in a local cloud

- **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



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

[6] Individualized mass production

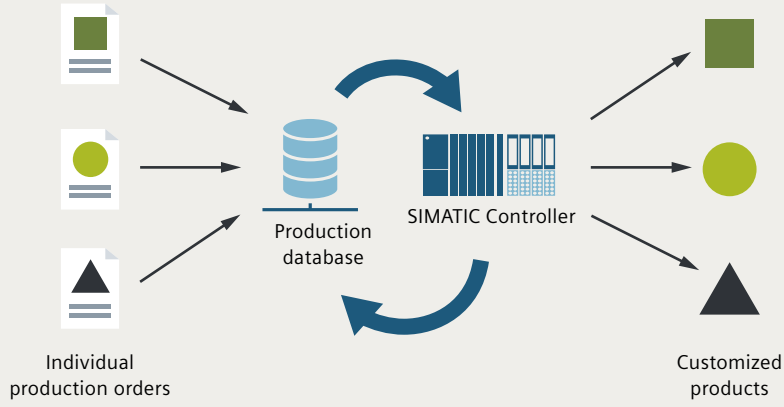
Increased product variance all the way to customization

- **Connection of databases to the controller**
- **Simple engineering of database access**
- **Seamless transition to IT communication**

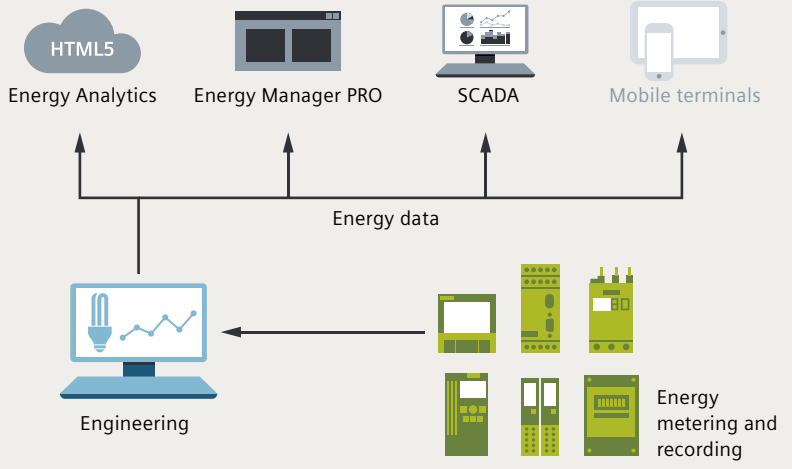
Our offering:

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

siemens.com/tia