Digital Enterprise Services

Service portfolio overview

siemens.com/digital-enterprise-services

Four good reasons for Digital Enterprise Services

SIEMENS
Ingenuity for life

With more than 150 service centers worldwide, we are always close to you

Our more than 2,400 service experts are happy to share their expertise with you

We have decades of experience with successfully implementing technology and equipment worldwide

Our customers are our first priority, 24 hours a day, 365 days a year

Total	
Siemens Repair Center	37
Siemens Factory Repair Center	11
Certified Partners	102

Status: June 2020

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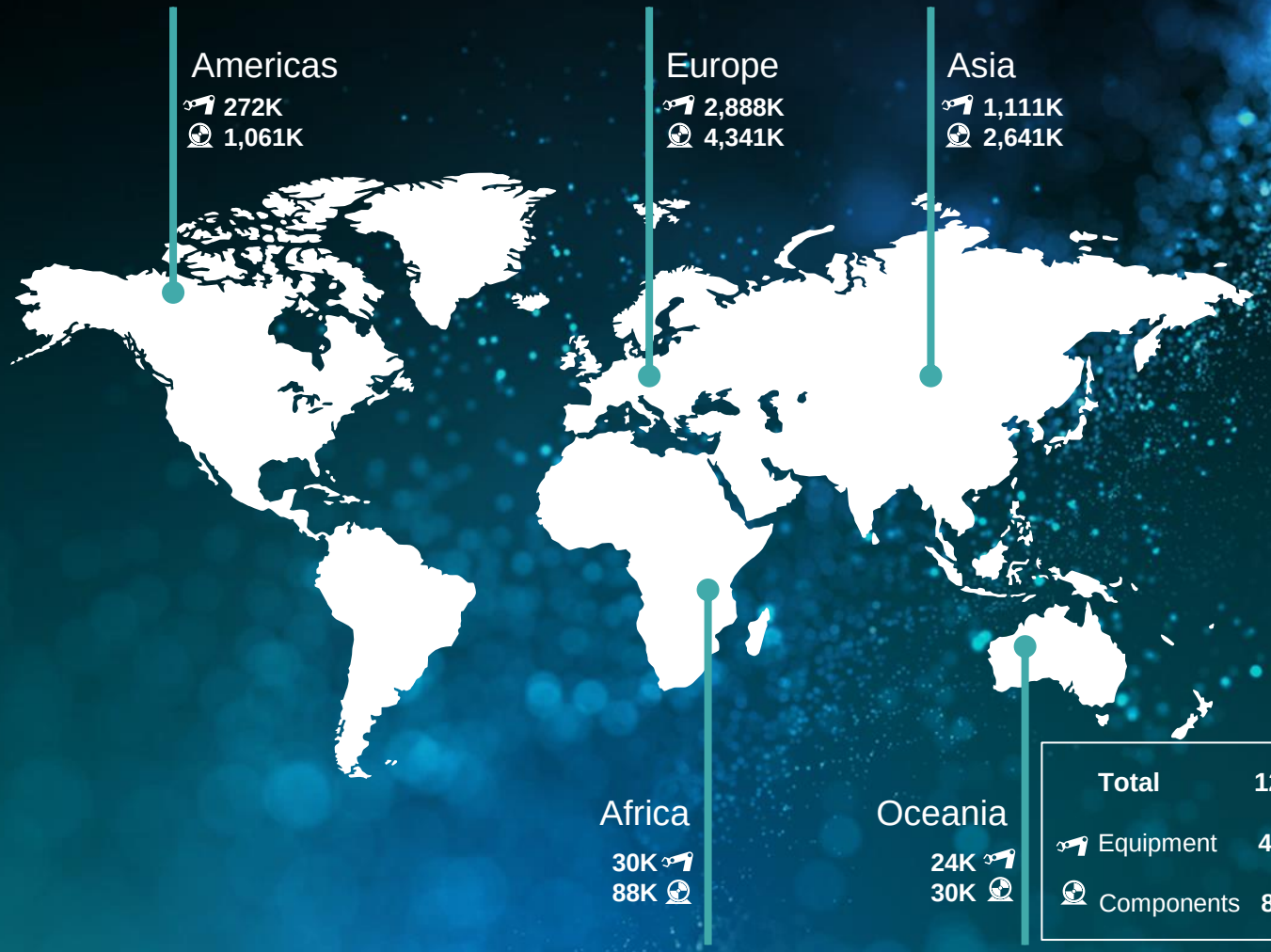

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Our approach for a successful digital transformation

Digital Enterprise Services

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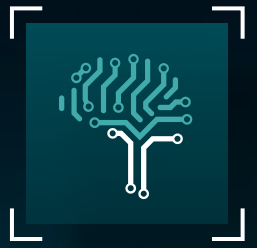
Consulting Services

Engineering and Integration Services



Analytics and Artificial Intelligence Services

Industrial Security Services

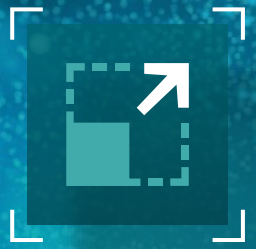
Training Services

Support Services

Field and Maintenance Services

Spare Parts Services

Repair Services



Retrofit and Modernization Services

Service Contracts

Service Programs and Platforms

Identify improvement potential with Consulting Services

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Consulting Services

Identifying improvement potentials together with the customer. Processes and technologies are analyzed and implementation recommendations are developed. This helps stay competitive in a fast-changing market environment.

- Expert knowledge paired with future-minded thinking enables a more structured project approach
- Maximized transparency on required implementation steps, time and costs
- Enhanced competitiveness by adapting to a fast-changing market environment

Identify improvement potential with Consulting Services

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Consulting Services

- Digitalization Consulting
- Technical Consulting
- Lifecycle Information Services

Identify improvement potential with Consulting Services

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Consulting Services

Digitalization Consulting

Technical Consulting

Lifecycle Information Services

Master your digital transformation with Digital Enterprise Consulting

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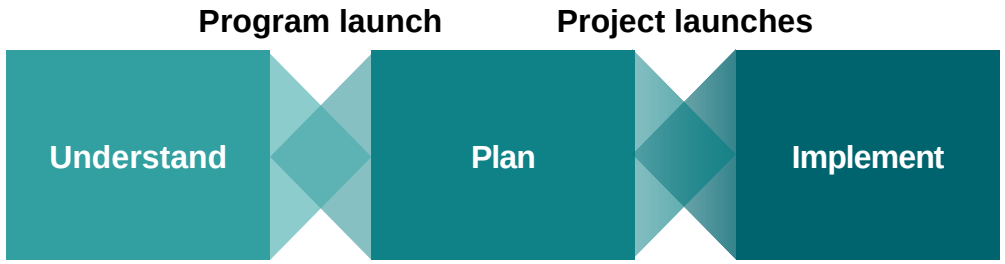
Digital Enterprise Consulting

Digital Enterprise Consulting is a holistic end-to-end approach for your digital transformation, in which your Siemens experts develop a digitalization roadmap tailored to your specific needs and business drivers.

How does it work?

- Understand: Determination of your strategic priorities and identification of your relevant digital enterprise value chains
- Plan: Development of your specific digitalization program which includes elaboration of a solution map, the program organization and the definition of projects
- Implement: We guide you through your projects



Main value drivers

- Transparency of your digitalization readiness
- Digitalization roadmap tailored to your business drivers
- Increased digital trans-formation effectivity

How digitalization helps with the Digital Enterprise Experience Day

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Digital Enterprise Experience Day

Digital Enterprise Experience Day is an individual customer centric format where digitalization comes in touch. Siemens Service Experts share benefits, strategies and technologies in the lab and shopfloor. Siemens consultants provide their experiences, complemented with expert know-how out of implementation projects.

How does it work?

- Freely select digitalization topics in a half or full day setup
- Discover the production facility in Fürth with consultants and understand how digitalization can increase the efficiency, quality and flexibility of the value chain
- Deepen your understanding of the chosen topics based on concrete application examples in the Digital Enterprise Experience lab
- Co-create with Siemens experts tailored to your needs

Main value drivers

Value driven discussion – From the top-management to the technician

Customer key learnings and references, complemented with expert know-how

Concrete implementation examples of Digital Enterprise use cases in our lab and shopfloor

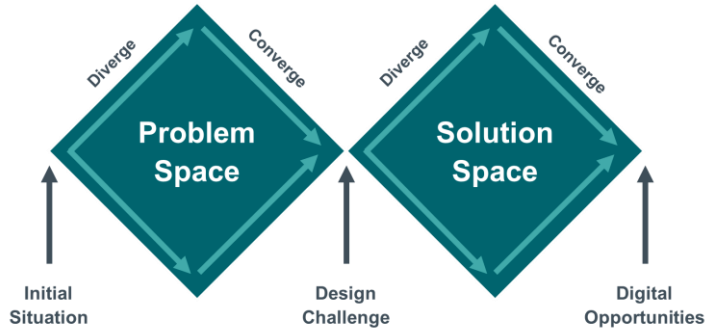
Identify challenges and opportunities through digitalization with Ideation Consulting

Ideation Consulting

Set direction and priorities for digital transformation. We look at the customer's problems from his point of view and find out where the pain points lie. The aim is to define most relevant action fields for your digital transformation journey.

How does it work?

The focus is need finding and ideation following the double diamond approach. Any Customer Value Co-Creation process starts with a discovery phase. Then we jointly develop a solution in association with our customer. Possible solutions can now be derived from the workshop.



Main value drivers

- Identify customers most relevant business challenges and value drivers
- Generate ideas for new digital business models together with our service experts
- Ensure competitiveness in a fast-changing market environment

High transparency about digitalization capabilities with Digitalization Check for Drive Systems

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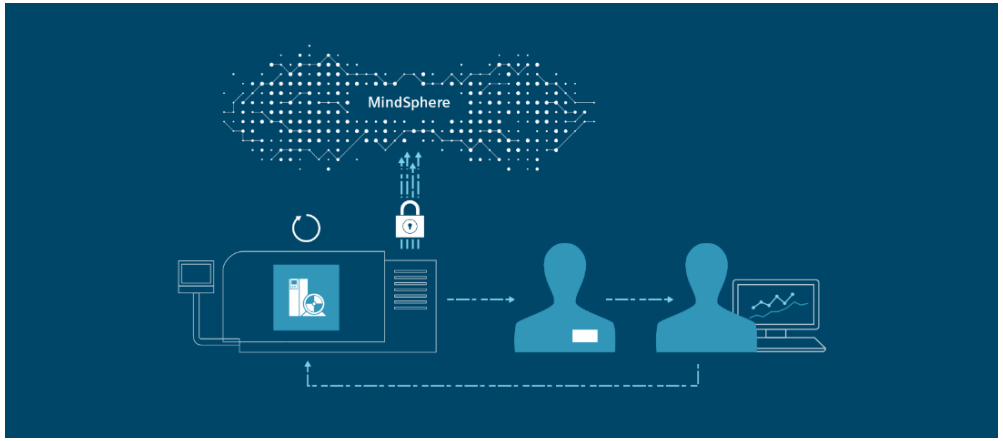
Digitalization Check for Drive Systems

Digitalization Check for Drive Systems provides certainty and transparency for connecting the drive systems of the machines and plant data to MindSphere.



How does it work?

Step 1: Machine and drive system data acquisition

Step 2: Evaluation of capability for digitalization

Step 3: Recommendation for action

Main value drivers

- Ensure availability
- Improve productivity
- Reduce costs

First step to benefit from the added value of a world of connected machine tools with Digitalization Check

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Digitalization Check for Machine Tools

Digitalization Check as a Service provides certainty and transparency for machine tools. The result is a document, provided by Siemens experts, which gives the customer objective recommendations for action in order to digitalize your production.

Digitalization Check is available for:

- SINUMERIK 840D
- Heidenhain CNC
- Fanuc CNC
- WEISS Spindles

How does it work?

Step 1: Machine data acquisition

Step 2: Evaluation of capability for digitalization

Step 3: Recommendation for action

Main value drivers

Ensured availability due to reliable, standardized data entry and evaluation

Increased productivity

Reduce costs

Achieve a transparent digital transformation strategy with Digital Transformation Awareness and Consulting CNC

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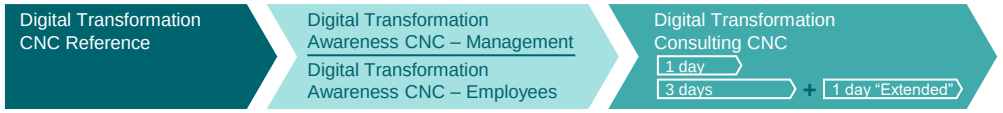
Digital Transformation Awareness and Consulting CNC

Digital Transformation Consulting CNC provides high transparency through comprehensive analysis of the customers processes, a digitalization strategy is tailored to the specific requirements and needs and the pre-conditions for a successful transformation into a digital enterprise are established.

How does it work?

- The customer is invited to make a reference visit to Bad Neustadt where they can see the opportunities and possibilities of digitalization
- Demonstration of the need for digitalization and preparation of active participation by employees
- Digital Transformation consultation through 3-day workshop with possible shortening and extension



Main value drivers

- Increased productivity
- Enhanced sustainability
- Reduce costs

Identify improvement potential with Consulting Services

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Consulting Services

Digitalization Consulting

Technical Consulting

Lifecycle Information Services

Shorter development times with Mechatronic Support

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Mechatronic Support

The Mechatronic Support service allows an efficient machine development thanks to years of experience in machine design, SINUMERIK and SINAMICS.

- Ensure during the design stage that all systems involved in mechanics, electronics, IT are tested and optimized in a **simulation environment** before they are actually built
- After the machine is built and first commissioning takes place, mechatronic support allows efficient optimization

How does it work?

- Machinery ideas and new developments can be tested mechatronically and modified in a short time at low expense
- The first real prototype can be built immediately afterwards as a functioning machine
- Prepare mechatronic support optimization projects efficiently, reduce costs with SINUMERIK Optimization Check

Machine simulation → Machine engineering → Machine commissioning → Machine optimization

Main value drivers

Ensured availability and risk-free testing of innovative machine concepts

Increased productivity and shorter development times

Detailed knowledge of the plant state with Technical Product and System Consulting

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Technical Product and System Consulting

To remain competitive, the operation of plants needs to be highly productive and efficient, yet also flexible.

Regardless of whether you're planning a new plant or modernizing your existing assets, our System Consulting Services support you with technical advice.

Proactive, regular service information helps you to optimize the availability of your plant through specific service recommendations.

How does it work?

- Identify areas for improvement, avoid risks
- Increasing the system availability through detailed knowledge of the plant state
- Experts from Siemens evaluate the results professionally and recommend actions to optimize the system availability

Main value drivers

Intensive data analysis

Regular reporting on the system status

Recommendations from Siemens experts

Identify vulnerabilities and areas for improvement with Preventive System Analysis

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Preventive System Analysis

Preventive System Analysis identifies potential risks and transparently shows the current situation of the plant. Special software tools collect extensive diagnostic data and system information, to be analyzed by using algorithms and evaluated by Siemens experts.

How does it work?

- **Module − Mobilization:** Prerequisite for the next steps, gather and structure the required system data
- **Module − Data Analytics:** Analyses the compiled system data, perform a detailed evaluation and provide specific recommendations
- **Module − Information Services:** System status report based on the results, evaluate the results and assess the condition

Main value drivers

Fast data collection and a structured database

In-depth data analysis with an expert knowledge database

Regular reporting on system conditions creates transparency

Detailed knowledge of the plant’s condition with SIMATIC System Audit

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SIMATIC System Audit

The SIMATIC System Audit provides a detailed insight into the quality of the project engineering and the current status of a PCS 7 System or a WinCC-based SCADA system with subordinate S7 level.

How does it work?

- **Module − Audit SCADA Status:**
  Detailed view of a WinCC-based SCADA system with a subordinate SIMATIC S7 automation level
- **Module − Audit DCS Status:**
  Detailed system analysis to evaluate the system status
- **Module − Audit DCS Upgrade Study:**
  Preparation of PCS 7 system-upgrade-projects
- **Module − DCS Lifecycle Services:**
  System checks as in “Audit DCS Status” and additionally a “Conformance Check”

Main value drivers

- Reduced downtimes and outage times
- Avoidance or minimi-zation of system risks
- Expert vulnerability and risk analyses with recommendations

Identify improvement potential with Consulting Services

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Consulting Services

Digitalization Consulting

Technical Consulting

Lifecycle Information Services

Detailed knowledge of the condition of your plant with Inventory Baseline Services

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Inventory Baseline Services

Inventory Baseline Services provide transparency for every aspect of the installed automation components of the machines and plants. It also acts as a decision-making tool and database for implementing additional services.

How does it work?

- **Phase 1:** Straightforward, effective recording of the existing plant base
- **Phase 2:** An analysis tool imports the recorded data and processes it
- **Phase 3:** The content of the reports is divided up into **Listing of the existing plant base** and **Overview of the system lifecycle status**

Installed base data collection → Data processing and verification → Inventory report

Main value drivers

- Cost-efficient and standardized inventory
- Decision-making aids for planned plant expansions
- Preparation for updates/upgrades

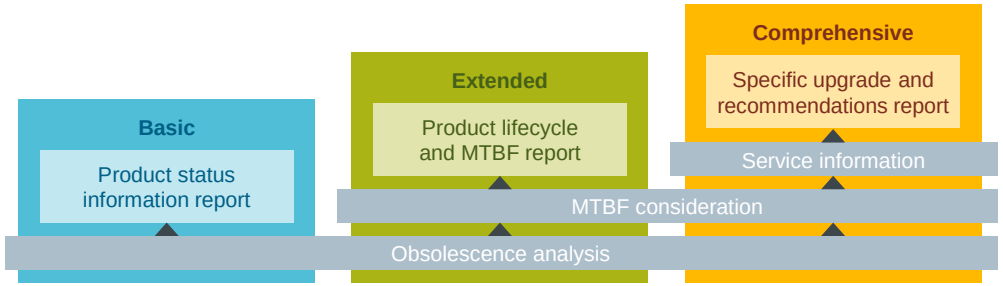
Improved transparency on the product lifecycle with Lifecycle Information Services

Lifecycle Information Services

Lifecycle Information Services provide service information proactively on a modular basis. Plant-specific maintenance measures can be identified at an early stage and thus can be planned in advance.

How does it work?

- **Module 1:** Shows the general product lifecycle status and the emphasis is on analyzing the functional obsolescence
- **Module 2:** Provides additionally an extended analysis of the product-specific meantime between failures (MTBF)
- **Module 3:** The comprehensive module offers further plant specific information on upgrades/updates and relevant services



Main value drivers

- Early identification of spare parts bottlenecks
- Calculable and reduced maintenance costs
- Higher transparency on spare parts availability and serviceability

Transparency of obsolescence with Plant Assessment Automation

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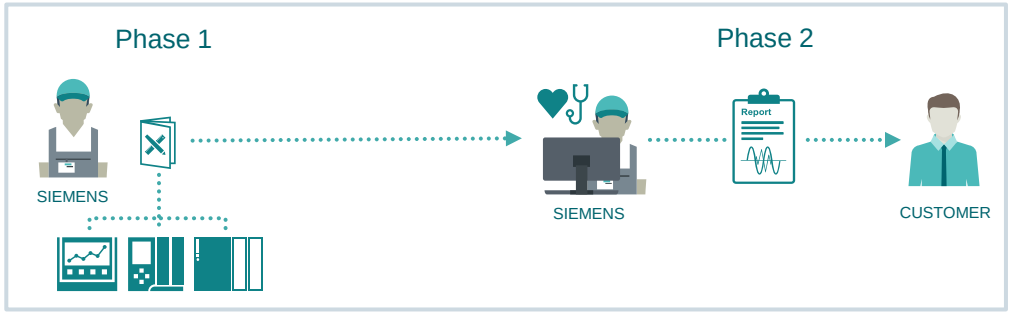
Plant Assessment Automation

Plant Assessment Automation aims towards creating transparency of the installed base within any factory and provides an obsolescence report about the lifecycle status and suggested measures.

How does it work?

- Phase 1: Regional on-site assessment to capture and document the installed base
- Phase 2: A report provides clear view of the installed base and obsolescence status of the components (**Siemens** & **competitors**) and gives recommended measures based on lifecycle status



Main value drivers

- Transparency of installed base
- Information about obsolescence status and suggested measures
- Enabler for obsolescence management to secure productivity

Transform to a digital enterprise with Engineering and Integration Services

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Engineering and Integration Services

Integrating cutting-edge technologies and innovative services. These can range from ensuring the necessary connectivity from field to edge and cloud or developing virtual machines and digital twins.

- Enhanced productivity thanks to continuous data analytics and transparency
- Reduced time and costs by creating a virtual machine in a standardized test and development environment
- Easy and flexible integration with our flexible connectivity and integration approach

Transform to a digital enterprise with Engineering and Integration Services

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Engineering and Integration Services

Digital Twin Services

Integration

Transform to a digital enterprise with Engineering and Integration Services

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Engineering and Integration Services

Digital Twin Services

Integration

More efficient and flexible production with Digital Twin Services

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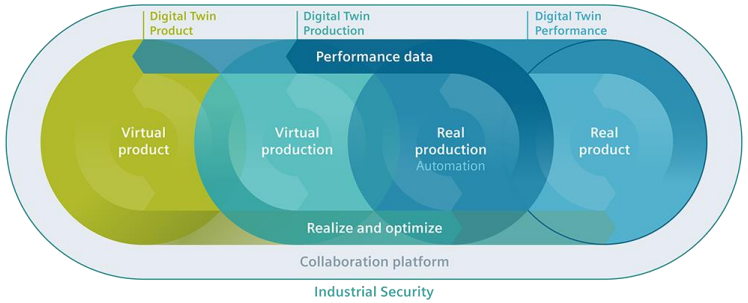
Digital Twin Services

Digital Twin Services help to know the behavior of the **product, production** and **performance** and to understand, which changes are possible to reach higher efficiency.

How does it work?

- **Proof of behavior:** Simulation of the product, production and performance with focus on bottleneck analysis, equipment utilization, throughput…
- **Validation of adaptions:** Use of simulation models to find an efficient and solid concept for your production
- **Implementation of improvement:** Adapt actual parameters according to simulation results



Main value drivers

Reliable validation through simulation of the real product, production and performance

De-bottleneck, increased equipment utilization, flexibility and throughput

Saved time and money due to virtual commis-sioning and simulation

Reduction of development time with Virtual Commissioning Services

Virtual Commissioning Services

Virtual Commissioning Services helps to get started with virtual commissioning through a combination of consulting, training and implementation. Engineering, commissioning efforts and risks can be reduced.

How does it work?

Siemens experts are able to structure, implement and service digital twins of your machines and production lines. Virtual Commissioning Services is always a combination of different technical topics to operate virtually a machine or line. The offering covers the area of low to high standard complexity of the simulated object.

Digital Twin

Physical and kinematic model	+	Electrical and behavior model	+	Automation model

Main value drivers

- Reduction of development time by 5 – 10%
- Reduction of commissioning time by 20 – 30%
- Easy start in a new field of simulation in development and commissioning

Reduction of development time with SINUMERIK Virtual Commissioning Services

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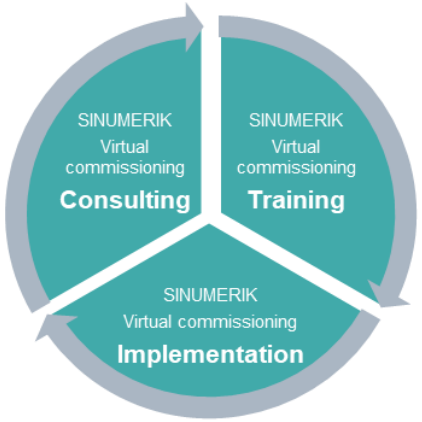
SINUMERIK Virtual Commissioning Services

Connect the virtual machine model to the real-life control system with Virtual Commissioning Services for SINUMERIK 840D and SINUMERIK ONE – Siemens helps prepare and support the real-time commissioning process on a project-specific basis by means of consulting, implementation and training for the virtual commissioning.

How does it work?

The requirements specific to the project are first analyzed, and then the virtual commissioning process is prepared and implemented. Simulations enable any errors to be detected and rectified at an early stage. Employee training ensures that the mechanical engineers can perform the virtual commissioning on their own in the future.



Main value drivers

- Create sustainability
- Reduced costs due to risk-free preparation for the commissioning in a completely integrated virtual simulation system
- Increased productivity due to shortening of the commissioning by up to 70%

Optimized productivity of machines with NX Virtual Machine Tool Services

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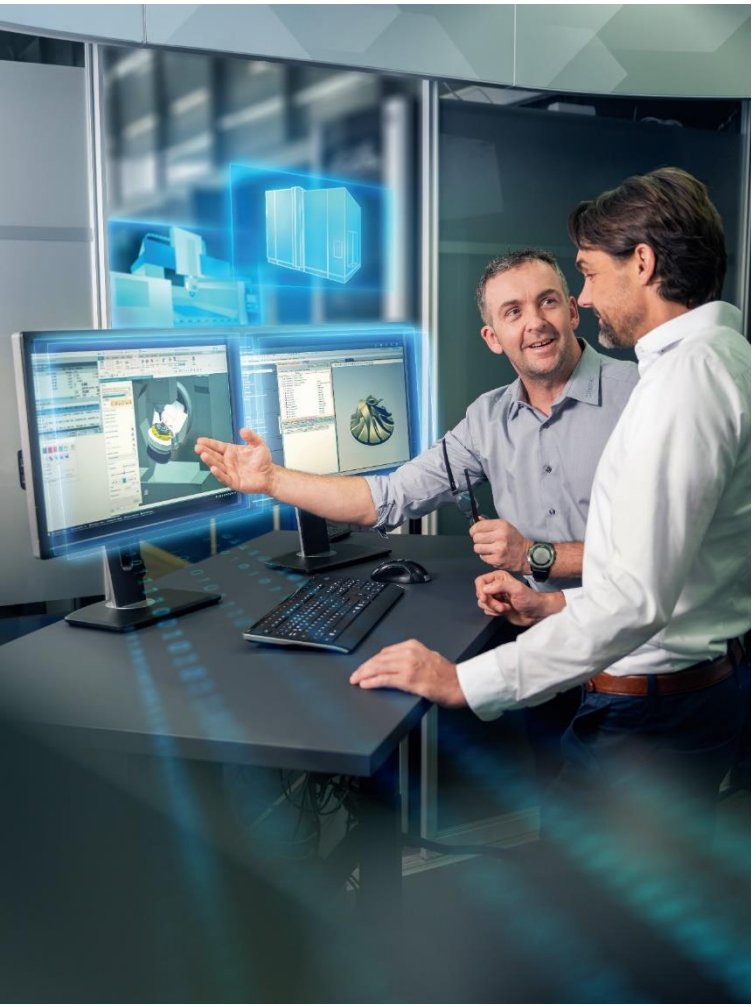
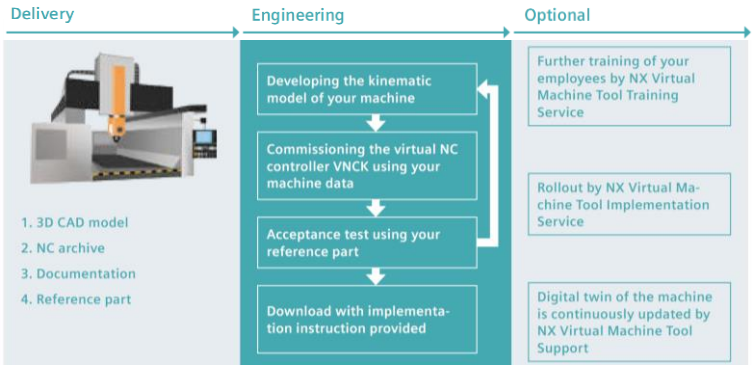


NX Virtual Machine Tool Services

Siemens provides a software solution to move unproductive and risky activities from the real machine to its digital twin. This keeps the real machine productive and new production orders can be implemented with reduced efforts and risks.

How does it work?

The combination of NX Simulation and virtual SINUMERIK 840D sl controller forms the solution for the digital twin of the machine tool for work preparation. Engineering, implementation, training and support services provide comprehensive support during the lifecycle.



Main value drivers

- Enhanced availability
- Reduced costs
- Increased productivity

Transform to a digital enterprise with Engineering and Integration Services

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Engineering and Integration Services

Digital Twin Services

Integration

Full data transparency of your machine park with Brownfield Connectivity Services

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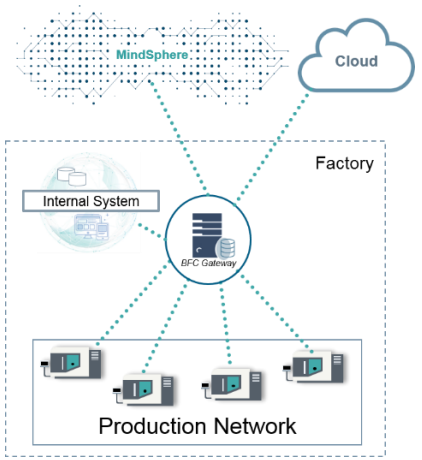
Brownfield Connectivity Services

Brownfield Connectivity Services establish a connection between the production network and the higher-level information systems based on a gateway solution.

Siemens provides a standard way to gather machine data from SINUMERIK 840D control systems, third-party CNC controls and automation technology. The service consists of consulting, implementation and maintenance to ensure seamless data transfer.

How does it work?

With Brownfield Connectivity Services, Siemens is able to offer a turnkey solution from machine tool control to evaluation software, all from a single source.



Main value drivers

- Ensured availability
- Increased productivity
- Optimized asset management

Optimize your machines and plants with Remote Data Acquisition Services

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Remote Data Acquisition Services

Remote Data Acquisition Services (RDAS) are connectivity services to allow data recording of hard to access, distributed machines/lines/applications – from remote access to remote diagnosis of e.g. local energy consumption.

How does it work?

Step 1	Consulting and concept definition
Step 2	Ordering Service
Step 3	Assembling Service RDA Unit
Step 4	Setup and configuration Service
Step 5	Installation and commissioning Service on-site
Step 6	Service Add-on

Main value drivers

- Improved data transparency
- Secure and simple connection to remote sites from anywhere in the world
- Ready-to-run solution from one single supplier

Enable the digital integration of SINUMERIK machines with Digitalization Preparation – Software Update

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Digitalization Preparation – Software Update

By implementing the recommendations from the digitalization check, Siemens update the machine tools to the state-of-the-art and get them ready for digitalization using software updates for SINUMERIK 840D sl.

How does it work?

Step 1	Extensive and recorded system test
Step 2	Data back-up before update
Step 3	Machine Software Update
Step 4	Data Back-up after update
Step 5	Extensive function test after update

Main value drivers

A proven implementation by a Siemens expert results in greater system reliability

The Update is implemented by Siemens experts with the greatest speed and efficiency. The customer is not required to have any prior expertise regarding the update

Fast and safe implementation by experts with Digitalization Implementation for Drives

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Digitalization Implementation for Drives

The digitalization of the drives SINAMICS S, SINAMICS G and Micromaster is made possible. The connection is provided by the Siemens organization on-site – simple, standardized and at a flat rate. At the end of the service, the customer has the data of his application available in the MindSphere.

How does it work?

To this purpose, the required Connect Devices are installed, configured appropriately and commissioned on-site. In this step, your drive applications/machines are connected to the MindSphere. The data can be accessed at any time and everywhere in MindSphere. This transparency forms the basis for further analysis.

Main value drivers

- Ensure availability
- Improve productivity
- Reduce costs

Fast and safe implementation by experts with Digitalization Implementation for Motors

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Ingenuity for life

Digitalization Implementation for Motors

The digitalization of low-voltage motors is made possible. The connection is provided by the Siemens organization on-site – simple, standardized and at a flat rate. At the end of the service, the customer has the data of his application available in the MindSphere.

How does it work?

To this purpose, the required Connect Devices are installed, configured appropriately and commissioned on-site. In this step, your drive applications/machines are connected to the MindSphere. The data can be accessed at any time and everywhere in MindSphere. This transparency forms the basis for further analysis.

Main value drivers

- Ensure availability
- Improve productivity
- Reduce costs

Fast and safe implementation by experienced experts with Digitalization Implementation for Machine Tools

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Digitalization Implementation for Machine Tools

Siemens starts the process of digitalizing the manufacturing facility in consultation with the customer and by implementing the defined digitalization concept. The necessary software modules from the CNC Shopfloor Management Software Suite are installed, appropriately configured, and put into operation on-site.

How does it work?

- One-hand-solution including consulting, project management, training and production-related services
- CNC Shopfloor Management Software modules based on Siemens Software suite SINUMERIK Integrate with main functions machine data coverage and -analysis, NC-Program-Management, Tool-Management and maintenance support, Machine-Management, machine condition coverage and -analysis

Main value drivers

Proven implementation by a Siemens expert results in greater system reliability

Implementation by Siemens experts with the greatest speed and efficiency

A specialized and proven training course permits the efficient use of the application without start-up difficulties

Increasing the degree of integration and synergies with Multi Vendor Device Integration

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Multi Vendor Device Integration

Multi Vendor Device Integration offers the possibility to homogeneously integrate field devices of different manufacturers into automation systems based on SIMATIC S7, SIMATIC WinCC and SIMATIC PCS 7.

How does it work?

- **Phase 1:** Evaluation of technical requirements, functional scope, target platform, scope of delivery and timeframe
- **Phase 2:** Development and system test of requirements according to specification
- **Phase 3:** Includes a Driver Block, preparation of multi-lingual documentation technical support and contractually guaranteed service capability

Main value drivers

Scalable and flexible – A range of integration options

Long-term preservation of service capability

Cost-effective solution

Using synergies efficiently with Power Control Integration Services

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Power Control Integration Services

Power Control Integration Services enable the homogeneous integration of electrical switchgear featuring devices for protection and control functions. This significantly increases the entire plant's degree of integration.

How does it work?

- **Module − Station Gateways:**
  Direct integration of IEC 61850 capable field devices in SIMATIC PCS 7
- **Module − Station Controller:**
  Station controller for medium-sized plants without an S7 automation system
- **Module − Software Integration:**
  Direct S7-IED communication and Direct OS-IED communication
- **Module − Service Package:**
  Maintaining service capability and technical support

Main value drivers

Cost-effective solution based on standard (Industrial Ethernet) components

Scalable and flexible from just a few to several hundred devices

Long-term protection of serviceability through assured spare parts availability and technical support

Efficient and flexible Software engineering with SIMATIC Software Platform as a Service

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SIMATIC Software Platform as a Service

SIMATIC Software Platform as a Service offers a cloud-based IT infrastructure with pre-installed and pre-configured SIMATIC engineering software. The engineering environment lends itself to short-term, time-limited, and consequently flexible use.

How does it work?

- **Module − Cloud Platform:** Provides all necessary resources, such as computing power, memory, networks
- **Module − Virtual Appliances:** Consists of a pre-configured operating system and the desired application software
- **Module − Isolated Environment:** A virtual appliances and the corresponding customer access are made available
- **Module − Managed Support:** Complete administration of the service, a SIMATIC Remote Support is optionally available

Main value drivers

Ready-to-run engineering environments

Flexible use of distributed engineering resources

Demand-oriented price model reduces the investment costs to the actual use

Highest priority on the safety with Functional Safety as a Service

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Functional Safety as a Service

Guaranteeing the functional safety of your machines is a process involving many work steps and resources. Based on a risk assessment of your machine that you make available to us in advance, we will support you with our expertise in different process steps.

How does it work?

- **Pre-Check and Doc-Check:** Professional documentation is the basis for a safe machine
- **Safety Concept:** Machine safety right from the start
- **Safety Design:** Standard-compliant and tailored to your needs
- **Safety Engineering:** Engineering and components from a single provider
- **Verification:** Whether simulated or with the real system

Main value drivers

Individual modules along the safety lifecycle

Legally compliant documentation of machine safety as the basis for a valid CE label

Tailored solutions for machines

Optimize operations and maintenance with Analytics and Artificial Intelligence Services

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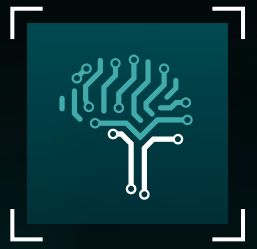

Analytics and Artificial Intelligence Services

Optimizing operations and maintenance processes with the help of data analytics using edge, cloud and algorithms. This allows for anomaly detection at an early stage and identifies improvement potentials within the actual production process.

- Early anomaly detection and prediction of potential upcoming failures through continuous data analysis
- Identify improvement potentials within your production process using trained artificial intelligence algorithms
- Plan maintenance measures more efficiently by aligning your maintenance activities according to actual needs

Optimize operations and maintenance with Analytics and Artificial Intelligence Services

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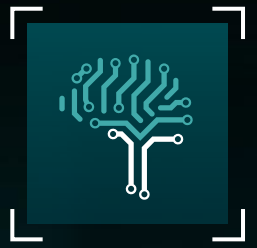

Analytics and Artificial Intelligence Services

- Condition Monitoring
- Predictive Services
- Performance Analytics

Optimize operations and maintenance with Analytics and Artificial Intelligence Services

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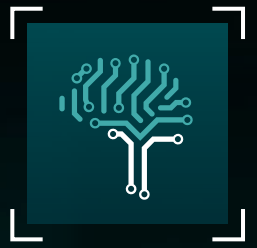

Analytics and Artificial Intelligence Services

Condition Monitoring

Predictive Services

Performance Analytics

Increasing the availability of the machine tool with SINUMERIK Service Assistance

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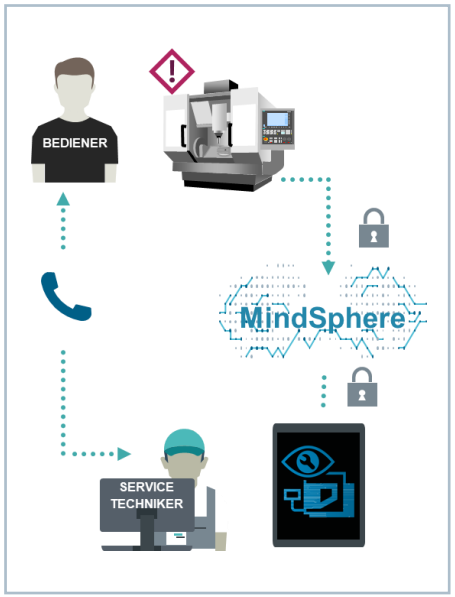
SINUMERIK Service Assistance

The MindSphere application SINUMERIK Service Assistance offers a standardized way to support service experts with error analysis on machine tools with the SINUMERIK 840D/828D controller.

How does it work?

- **Machine Transparency:** Automatic detection of hardware components, firmware, software and their changes
- **Machine Condition:** Intelligent evaluation of extended state data of control and drive technology
- **Error Analysis:** Targeted identification and evaluation of error states and faults



Main value drivers

Reduce operating costs by optimizing existing processes using digital service tools

Ensure availability with online diagnostics based on continuous data collection and real-time transparency

Sustainable data storage of machine events with relevance for maintenance

Optimize operations and maintenance with Analytics and Artificial Intelligence Services

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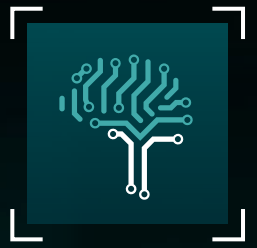

Analytics and Artificial Intelligence Services

Condition Monitoring

Performance Analytics

Predictive Services

Operate your maintenance on an efficient future proof level with Predictive Services for Drive Systems

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Predictive Services for Drive Systems

Predictive Services for Drive Systems provide higher productivity through optimized maintenance cycles as a standardized extension of the local service contract. The basis for this is the MindSphere application Predictive Service Assistance for more efficient maintenance of your low-voltage drive systems.

How does it work?

The maintenance personal will be assisted by Predictive Services

- Predictive Service triggers and notifications
- Transparency of needed spare parts
- Assistance for planning, handling and documentation of maintenance via maintenance logbook
- Easy order function via e-mail and Global Service Platform

Main value drivers

Increased productivity and reduced down times

Full transparency on spare parts and maintenance to risk mitigation by easy identification of gaps

Optimized maintenance efficiency and lean ordering process due to digital assistance

Improve the performance of your presses with Predictive Services for Presses (Automotive)

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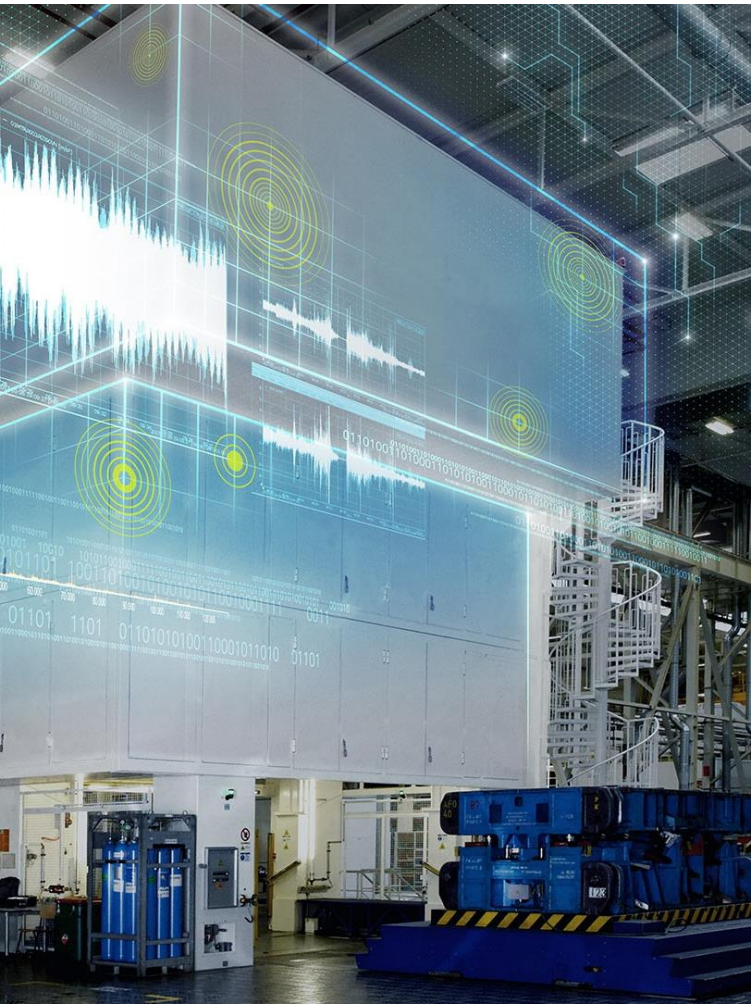

Predictive Services for Presses

In the automotive industry, presses are critical points. Their failure can put entire production lines out of action. Predictive Services for Presses let you see into the future of your press in order to detect imminent errors before they happen. They allow you to adapt maintenance work to the actual condition of your production plant instead of having to rely on fixed service intervals.

How does it work?

- **Module 1 – Assessment:** We assess the current situation onsite based on machine data, automation hardware, network situation, and similar factors and generate a detailed connectivity concept.
- **Module 2 – Connectivity:** The connectivity concept serves as the framework for installing various components in order to acquire the necessary operational data and we implement a tailored edge or cloud solution.
- **Module 3 – Analytics:** We evaluate collected data based on algorithms supported by AI and provide informative reports on the status of your plant and potential failures.

Main value drivers

Enjoy full transparency regarding the status of your presses using round-the-clock automatic plant monitoring

Improve plant availability using status-based, predictive maintenance

Proactively avoid unscheduled production outages by aligning maintenance and servicing activities with actual needs

Minimized standstills of the production line with Predictive Services for Foundry (Automotive)

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Predictive Services for Foundry

It's often the small things that shut down a foundry for automotive manufacturing, such as wear to a drill bit in the milling station for castings. Predictive Services for Foundry connect your foundry to Edge or Cloud solutions, provide solid analyses of condition data and sources of error through our experts, and enable even faster and more precise evaluation based on artificial intelligence.

How does it work?

- **Module 1 – Assessment:** We assess the current situation onsite based on machine data, automation hardware, network situation, and similar factors and generate a detailed connectivity concept.
- **Module 2 – Connectivity:** The connectivity concept serves as the framework for installing various components in order to acquire the necessary operational data and we implement a tailored edge or cloud solution.
- **Module 3 – Analytics:** We evaluate collected data based on algorithms supported by AI and provide informative reports on the status of your plant and potential failures.

Main value drivers

Predicting potential outages helps avoid downtimes affecting the entire line

Optimized maintenance enhances the service life of consumable parts

Forecasting condition & remaining availability allows maintenance work based on actual condition of components instead of following a fixed schedule

Detection and corrections failures at an early stage with Predictive Services for Depaneling Machines (Electronics)

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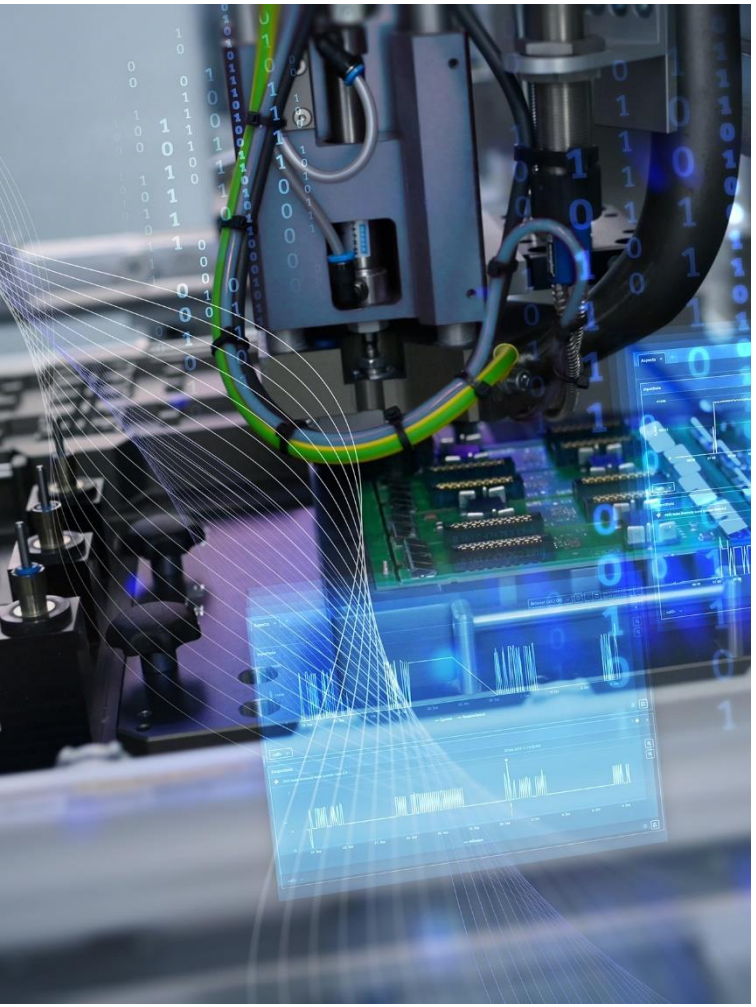

Predictive Services for Depaneling Machines

PCB milling generates corrosive dust that settles on the milling spindles, causing them to wear. Instead of relying on fixed maintenance intervals, Predictive Services for Depaneling Machines analyze spindle tension and speed to identify anomalies.

How does it work?

- **Module 1 – Assessment:** We assess the current situation onsite based on machine data, automation hardware, network situation, and similar factors and generate a detailed connectivity concept.
- **Module 2 – Connectivity:** The connectivity concept serves as the framework for installing various components in order to acquire the necessary operational data and we implement a tailored edge or cloud solution.
- **Module 3 – Analytics:** We evaluate collected data based on algorithms supported by AI and provide informative reports on the status of your plant and potential failures.

Main value drivers

Based on data analysis, schedule the spare parts you need in advance

Improve your overall equipment effectiveness by reducing downtimes

Extend the service life of your milling spindle through ongoing data analysis

Optimize operations and maintenance with Analytics and Artificial Intelligence Services

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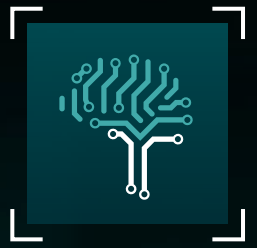

Analytics and Artificial Intelligence Services

Condition Monitoring

Predictive Services

Performance Analytics

Track and increase your throughput with OEE Analytics

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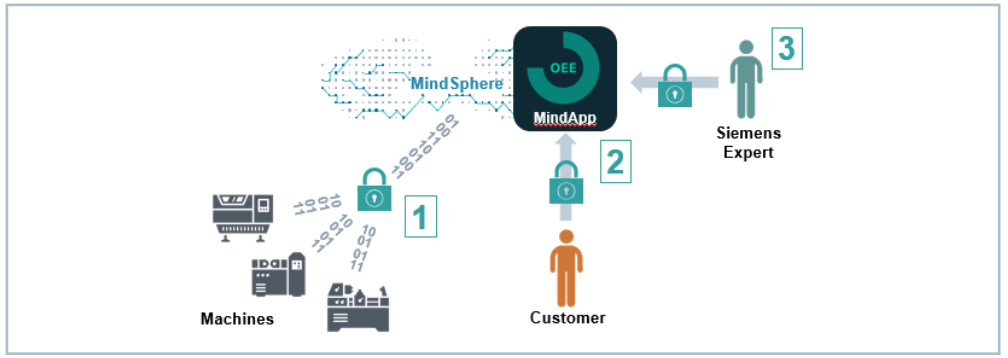
OEE Analytics

OEE Analytics enables improvement of the overall equipment effectiveness through concept definition, installation of data acquisition setup, cloud-based OEE transparency and expert analytics for OEE diagnostics.

How does it work?

- **Phase 1:** Concept definition and MindSphere connectivity
- **Phase 2:** OEE Visualization from production line to machine level
- **Phase 3:** Expert Analytics for OEE diagnostics



Main value drivers

Transparency about quality, availability and performance of machines

Identification of potential for improvement in overall equipment effectiveness

KPI based production planning and machine optimization possible

Plant Effectiveness as a Service – Using consulting and data analysis to improve production operations

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Plant Effectiveness as a Service

We work with your site team to better understand current production performance and define measurable improvements in 3 steps.

Discovery of potential → Definition of measures → Delivery of the managed service

How does it work?

1. **Discovery** of production improvement potential using data modelling and a site survey
2. **Definition** of performance improvements with quantified measures and return on investment calculations
3. **Delivery** of the Managed Service to maintain high-performance production into the future

Main value drivers

- Realize the full potential of existing resources
- Quantify the benefits of future investments
- Monetize and confirm improvements

Identify potential energy savings with Industrial Energy Management Services

Industrial Energy Management Services

Industrial Energy Management Services help identifying saving potentials in all kind of consumption – e.g. electricity, fluids or gas. Based on the analysis of existing data, Siemens experts examine potential savings and make recommendations for energy-saving measures.

How does it work?

1. On site concept workshop
   - Definition of Energy Performance Indicators (EnPIs)
   - Creation of a measuring concept
   - Evaluation of data collection and connectivity requirements

2. Installation of the needed hard- and software
   - Data modeling and preprocessing of the input data
   - Creation of dashboard and consumption reports

3. Energy Efficiency analysis
   - Analysis of the potential for optimizing energy efficiency
   - Specific recommendations to optimize energy efficiency
   - Individual service contract

Main value drivers

Increasing the transparency of energy consumption and KPIs

Data analysis and determination of energy saving potential by Siemens experts

Automated consumption reports in web portal – anytime, anywhere

MindSphere knowledge base to reduce downtimes with Asset Operations Analytics

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Asset Operations Analytics

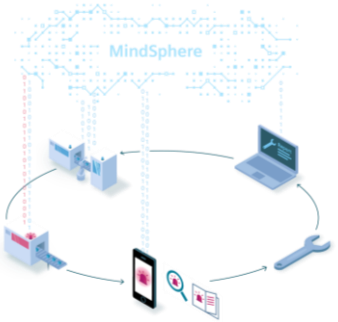
The optimization of plants and processes, some of which are set up worldwide, results in new challenges for the staff. They have to gain extensive know-how and they have to understand the more complex coherences.

With the MindApp "Asset Operations Analytics", Siemens offers a solution to create a central knowledge base to support fixing incidents on the shop floor and bringing transparency back into increasingly complex facilities.

How does it work?

Asset Operations Analytics functionality:

- Document incidents
- Distribute knowledge
- Track the use of resources
- Assist with statistical evaluations
- Support quality management processes



Main value drivers

- Reduce downtimes with recommended actions
- Make better use of own expert knowledge without limits in time and location
- More efficient deployment of human resources on the shop floor

Enhanced quality prediction with Closed Loop Analytics Services for Electronics

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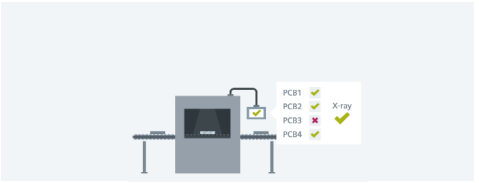
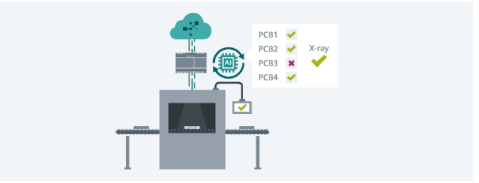
Closed Loop Analytics Services for Electronics

Expensive and time-consuming test scenarios can be minimized enabled by the quality prediction of electronic components based on relevant production data and a trained AI algorithm.



Before: 100% X-ray quality testing is a bottleneck and is time-consuming



After: Quality prediction enables less testing efforts and saves time

How does it work?

- Ideation and Scoping: Selection of use case and description from Data Science point of view
- Proof of Value: Realization of a feasibility study with customer-specific data
- Managed Services: Implementation at customer site and operation of AI algorithms

Main value drivers

Quality prediction based on algorithm saves time-consuming test scenarios

Reduced logistic effort for testing brings more flexibility on the production site

Reduced capital investment of expensive test equipment

Optimize Production and Logistic Workflows with Location Intelligence

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Location Intelligence

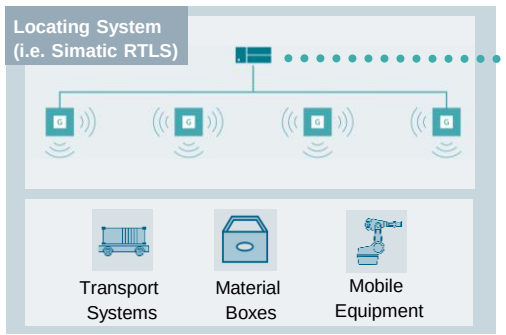
- Realizing the digital twin of the production performance
- Provides optimization potential for production or logistics workflows based on real-time analytics on position information of mobile assets

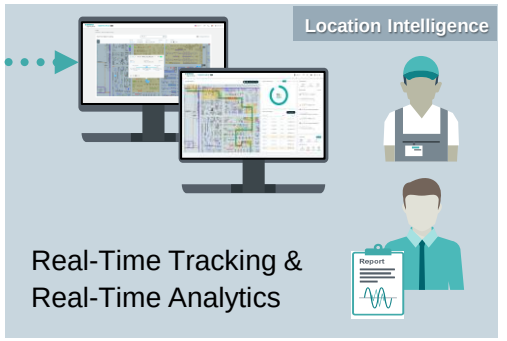
How does it work?

Phase 1: Locating system & Location Intelligence are installed

Phase 2: Real-time analytics unveil opportunities for improvement

Phase 3: Production is optimized making use of the potential of Phase 2





Main value drivers

Reduce search times to a minimum by adding **transparency** to the production and save up to 150.000€ per year

Prevent bottlenecks and other unplanned scenarios as anomalies are made visible by real-time **analytics**

Use the detected position based events as triggers to **optimize** the production

Securing of the productivity with Industrial Network Validation

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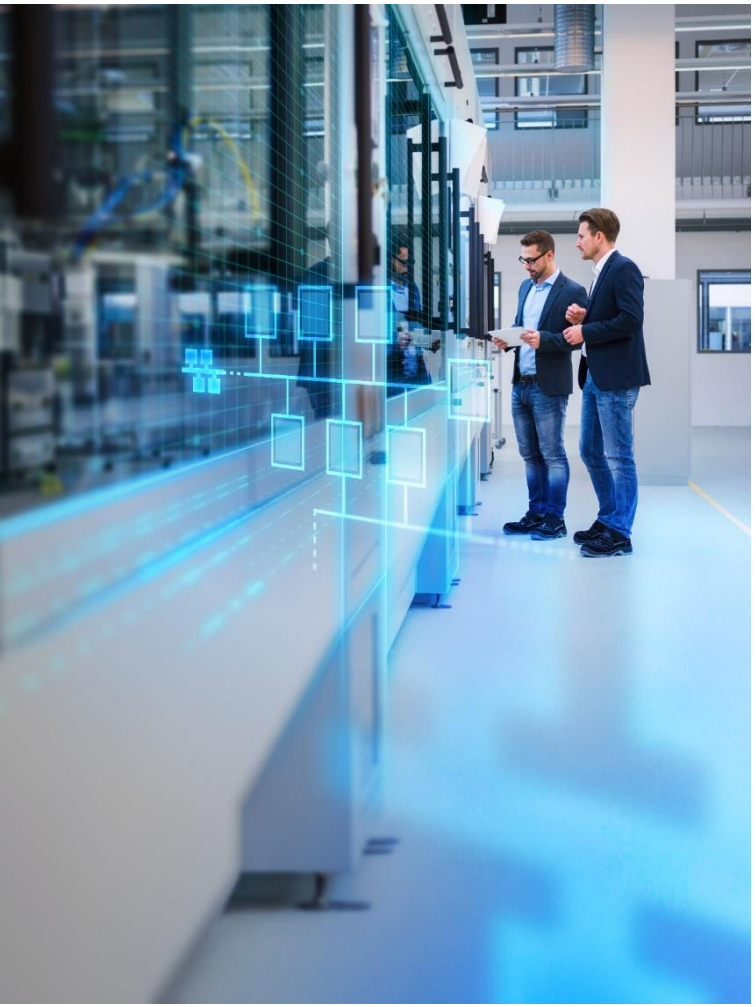
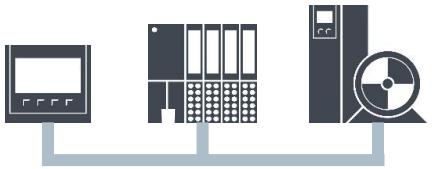


Industrial Network Validation

The validation for PROFINET or PROFIBUS-DP networks provides security while planning line extensions and as part of acceptance tests. It helps in case of instability and gives recommendations to improve the reliability.

How does it work?

- Pre-clarification: Clarification of the entire project execution (schedule, partner, responsibilities, etc.)
- On-site-deployment: Online stress test to identify available network reserves and to detect potential error sources
- Validation report: The report highlights the results with a traffic light system and gives recommendations how and where to act



Main value drivers

Preventive detection of incidences

Identification and documentation of the potential for optimization

Transparency about network weaknesses and reserves

Preventive and continuous detection of network incidences with Industrial Network Analytics

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Industrial Network Analytics

Plant or machine networks are the central nervous system of any manufacturing unit that bears a direct influence on the productivity and availability of production systems. Due to the high degree of machine networking the complexity of the plant topology is increasing rapidly.

With Industrial Network Analytics, Siemens offers an automated approach to handle this complexity by providing continuous network monitoring, the retrieval of status information and alerting in the event of an incident.

How does it work?

The following services are included

- Delivery and installation of Bus Analyzer and PC hardware including all cables, Scalance switches and software tools as BANY Manager and INA Mind app
- Physical check of the network structure
- Continuous data check
- Continuous alarming, event handling and visualization of the network KPIs
- Analytics report at the end of the year

Main value drivers

Preventive detection of incidences

Transparency about network weaknesses and reserves

Network analytics for identification and documentation of the potential for optimization

Analyze and optimize the production with Data and Process Analysis

Data and Process Analysis

Data and Process Analysis is intended for end customers who use the SINUMERIK Integrate (SI) modules Analyze MyPerformance (AMP) and/or Analyze MyCondition (AMC) to increase their manufacturing efficiency.

How does it work?

- Over a period of three years, the customer and the Siemens Consultant will agree on 10 days during which the data and process analysis will be performed
- The period of performance will renew automatically by another year
- The service can be provided on-site or by remote access
- The Siemens Consultant will document and communicate all analyses, actions, implementations and all relevant events using a service logbook

Main value drivers

- Reduce costs
- Increased productivity
- Optimize asset management

Improve the machine parametrization with SINUMERIK Optimization Check

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SINUMERIK Optimization Check

The digital service SINUMERIK Optimization Check is a service for machine tool builders. The service is based in the know-how and experience of Siemens mechatronic support and provides the customer with machines with SINUMERIK 840D sl or SINUMERIK ONE with recommendations for optimal machine parametrization.

How does it work?

1. Data extraction from SINUMERIK 840D sl/ONE
2. Data analysis and discovery of optimization possibilities
3. Optimization report and expert clarification

Main value drivers

- Increased productivity up to 16% by checking machine utilization
- Improved quality and accuracy by checking machine control configuration
- Identify mechanic problems with frequency analysis

Increased productivity up to 15% for machines tools with Productivity Improvement

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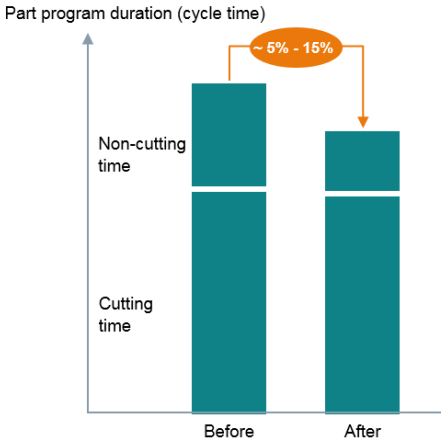
Productivity Improvement

For intensively used machine tools with high utilization, being able to use additional machine capacity offers an economic benefit. With Productivity Improvement, Siemens offers analysis and implementation of manufacturing potential for machine tools equipped with SINUMERIK. Measures to improve productivity are verified upfront using simulation and finally implemented and verified on the machine tool.

How does it work?

- Professional consulting
- Localization and estimation of PI potential
- Analysis, solution finding and realization of the PI measures in the laboratory
- Implementation of the PI optimization on side



Main value drivers

- Reduced costs
- Increased productivity up to 15%
- Only short stand still times by systematic and time-optimized project handling

Protect operational technologies (OT) from cyber threats with Industrial Security Services

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Industrial Security Services

Protecting operational technologies (OT) against cyber threats. The holistic security concept is based on state-of-the-art technologies, applicable security rules and standards, paired with specialist technical expertise for automation and cybersecurity.

- Enhanced transparency through continuous monitoring of the connected assets
- Early threat detection thanks to continuous monitoring
- Optimal investment protection through a holistic security approach

Protect operational technologies (OT) from cyber threats with Industrial Security Services

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Industrial Security Services

- Security Consulting
- Security Implementation
- Security Optimization

Protect operational technologies (OT) from cyber threats with Industrial Security Services

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Industrial Security Services

Security Consulting

Security Implementation

Security Optimization

Plant-specific security roadmap with Security Assessments

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Security Assessments

Operators of production facilities these days cannot afford to do without effective security measures. But where to start?

Security Assessments cover a holistic analysis of threats and vulnerabilities, the identification of risks and recommendations to close the identified gaps.

How does it work?

Industrial Security Check	Compact one-day on-site assessment
IEC 62443 Assessment	Assessment based on the best known security standard for automation environment
ISO 27001 Assessment	Assessment based on the leading standard for information security management systems
Risk and Vulnerability Assessment	Deep, time intensive analysis including data collection

Main value drivers

- Evaluation of the current security status
- Plant-specific and risk-based security roadmap
- Basis for transparent cost estimates

Quick transparency over assets and vulnerabilities with Scanning Services

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Scanning Services

The growing amount of assets and increasing complexity in automation environments lead to incomplete asset inventory, lack of patching, outdated hardware and software, resulting in increased risk of cyber incidents. Scanning Services provide an efficient evaluation method in industrial automation environments based on a broad combination of scan tools and Siemens expertise in industrial security.

How does it work?

- **Option 1:** Active Asset Inventory Scan to scan implemented assets and software versions
- **Option 2:** Vulnerability Detection Scan to detect vulnerabilities in the production environment

Main value drivers

- Transparency over implemented assets
- Detection of vulnerabilities
- Clear guideline to increase security level

Immediate access to industrial security expertise with Industrial Security Consulting

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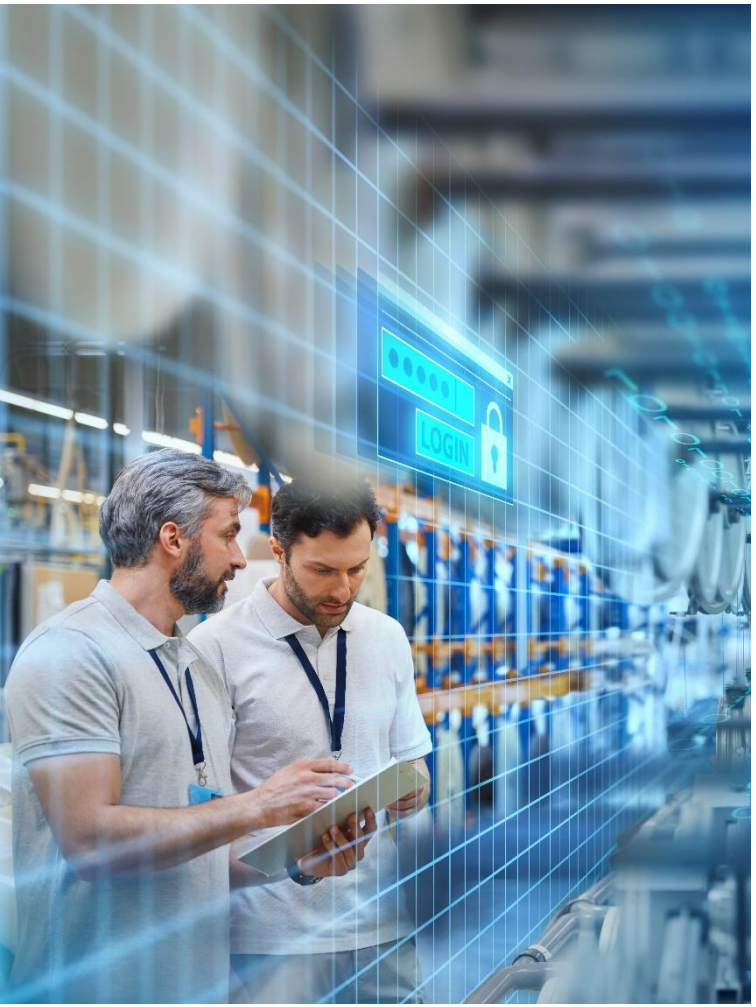

Industrial Security Consulting

Operators of production facilities these days cannot afford to do without effective security measures. But industrial security capacities are rarely available.

Industrial Security Consulting provides on-site support through experienced consultants regarding security policies and the plant-specific network layout as well as tailor-made implementation support for the industrial security portfolio.

How does it work?

Policy consulting
Review of existing and establishing/ integration of new policies, processes and procedures (e.g. password policy, patch and back-up strategy)

Network consulting
Support for cell segmentation of networks, design of a perimeter protection network, review and implementation of firewall rules

Implementation support
Smooth integration of security portfolio from planning over installation and configuration up to commissioning and hands-on training

Main value drivers

- Tailored security policies and concepts
- Immediate access to expert know-how
- No investment for developing own security capacities

Protect operational technologies (OT) from cyber threats with Industrial Security Services

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Industrial Security Services

Security Consulting

Security Optimization

Security Implementation

Secure the “weakest link” with Security Awareness Training

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Security Awareness Training

Most security incidents are caused by human error. Not surprisingly, as there is often no cyber security training offered at all. And even if trainings are available – they usually focus on classic IT-security topics for the office environment, ignoring the automation perspective. The web-based Security Awareness Training increases the situational awareness among to avoid security incidents caused by human error.

How does it work?

The training is based on typical daily situations and sample scenarios as well as statutory requirements and guidelines

- **Chapter 1:** Vulnerabilities of automation systems and their threat level
- **Chapter 2:** Measures for increasing security from the company’s perspective
- **Chapter 3:** Measures for increasing security from the operator’s perspective
- **Conclusion:** Final test incl. certificate

Main value drivers

- Situational awareness regarding security
- Recommendations how to handle cyber risk
- Help identifying security incidents

Continuous network protection with Automation Firewall Next Generation (NG)

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Automation Firewall

Shopfloor landscape has changed from isolated islands to highly complex networks without any segmentation from untrusted cyber networks (e.g. office or internet). Automation Firewall NG is a perimeter protection solution in line with security requirements for industrial automation, tested and approved for usage with Siemens process control system.

How does it work?

Step 1	Review of plant network layout
Step 2	Creation of a perimeter firewall concept
Step 3	Installation and configuration of firewall
Step 4	Documentation of firewall configuration

Main value drivers

- Continuous protection against known and unknown threats
- Tested and approved for PCS 7
- Very good price/ performance ratio

Continuous protection against malware with Endpoint Protection

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Endpoint Protection

The threat of malware in form of viruses, rootkits and trojans is growing exponentially – also for endpoint devices in industrial environments (e.g. IPC). Siemens offers two opposite approaches to protect against these malware:

How does it work?

Application Whitelisting

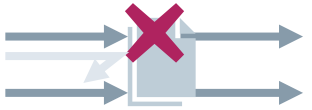
Only trusted applications are allowed to run.

Basis: Definition of trusted applications in a positive list (whitelist).

+ Protection of unsupported outdated systems
+ Effective protection against zero-day attacks

Antivirus

The execution of malicious applications is blocked.



Basis: Definition of known malware in continuously updated signature files (blacklist).

+ Lower commissioning cost
+ Flexible for system changes and updates

Main value drivers

Protection against known and unknown threats caused by malware

Easy, centralized operation via management server

Approved versions with tailor-made configurations for Siemens products

Protect operational technologies (OT) from cyber threats with Industrial Security Services

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Industrial Security Services

Security Consulting

Security Implementation

Security Optimization

Early detection of threats with Industrial Anomaly Detection

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Industrial Anomaly Detection

The shopfloor landscape has changed from isolated islands to highly complex networks without transparency about the “normal” communication and automatic detection of malware.

Industrial Anomaly Detection provides transparency over assets and data exchange as well as enhanced security through continuous and proactive identification of changes (anomalies) in the system.

How does it work?

- Use of an advanced machine learning system
- Correlation of the current traffic against baseline of normal operation
- 100% passive monitoring without direct impact on production
- Planning, implementation and commissioning through trained experts

Main value drivers

- Transparency over data exchange within industrial networks
- Early detection of anomalies and threats
- Automated asset identification

Proactive security and protection with Industrial Security Monitoring

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Industrial Security Monitoring

Rapidly growing cyber threats and evolving security risks require a preventive and industry-specific defense strategy. This starts with an overview of all activities on systems, networks, databases and applications.

Siemens offers a security information and event management (SIEM) system to continuously collect, link, analyze and display network information and information from security devices. Thus, safety-relevant incidents can be detected earlier and counter-measures initiated faster.

How does it work?

- **Central management:** Complete overview of any threats and risks, practical analyses for prioritizing and accelerating investigations and coordination of corrective actions in the event of any security incidents
- **Advanced analysis platform:** Continuous analysis, real-time correlation and alignment of monitored events with “Global Threat Intelligence” databases

Main value drivers

- Permanent transparency of security status and compliance
- Increased availability through fast alarming and reaction in case of threat identification
- Proactive protection thanks to threat intelligence

Fast reaction upon security incidents with Remote Incident Handling

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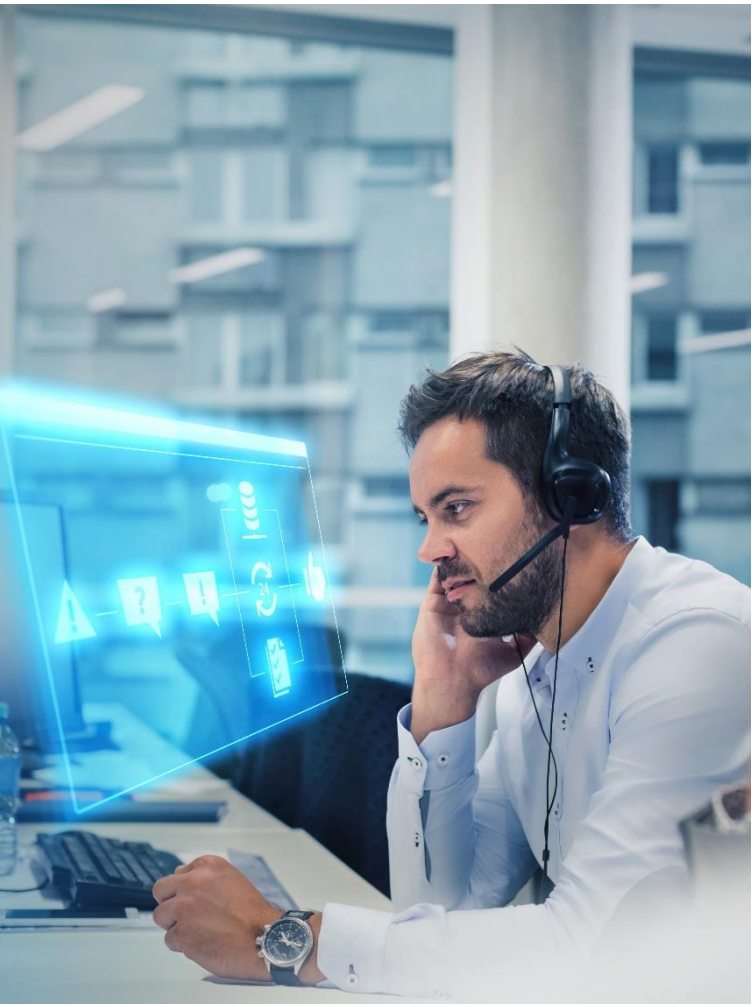

Remote Incident Handling

Even the most comprehensive measures for enhanced security do not guarantee 100% protection against attacks and security incidents. By clearing up security incidents quickly and in a targeted manner, the damage caused and its effects can be minimized. In case your plant is affected, Siemens industrial security experts support you remotely with an easy and fast delivery model – from the collection and analysis of data up to the recommendation of counter-measures.

How does it work?

Remote Incident Handling focuses on the rapid restoration of production:

Collection of forensic information → Comprehensive analysis of root-cause and criticality → Recommendation of a proper remediation strategy

Main value drivers

- Immediate access to expert know-how
- Supporting fast restoration of production
- Reduced downtime cost

Efficiently manage vulnerabilities to maximize availability with Industrial Vulnerability Manager

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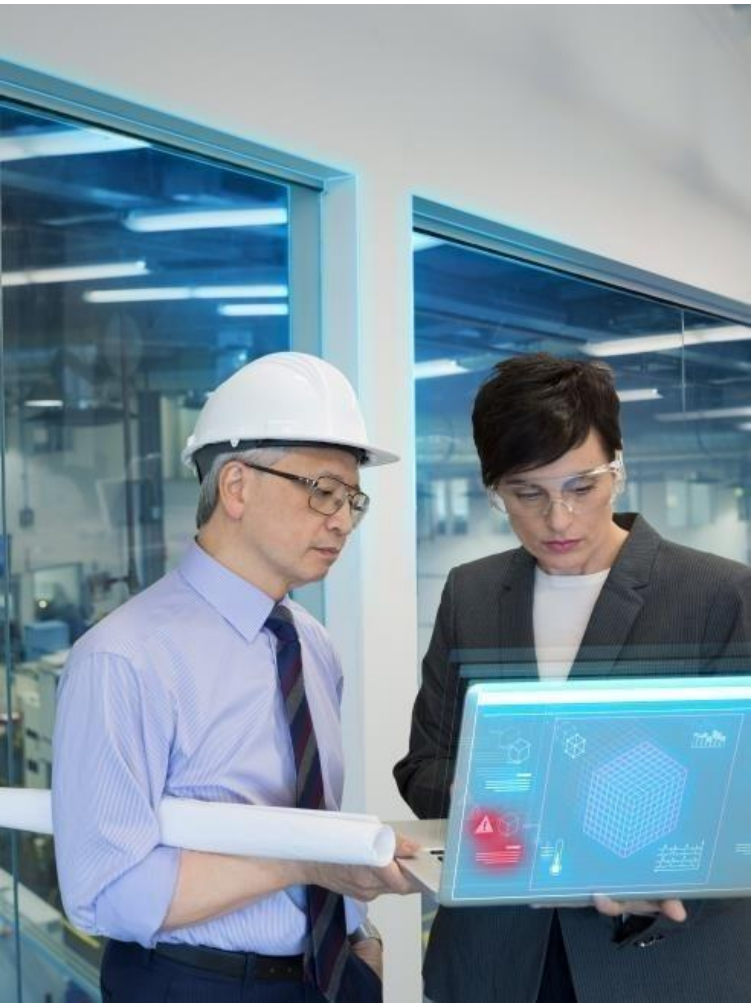

Industrial Vulnerability Manager

Every day new software vulnerabilities get reported. Currently manufacturers and operators struggle to identify if their products are affected.

Industrial Vulnerability Manager provides relevant security information, thus enabling manufacturers and operators of automation technology to proactively manage their cyber risks – tailored to their system in a one-stop shop.

How does it work?

Step 1: Definition of components to be monitored

Step 2: Monitoring regarding recently published vulnerabilities (completely in the background)

Step 3: Automatic generation of digital “Security Bulletins” in case of detected vulnerabilities

Main value drivers

Instant transparency on vulnerabilities and patches

Proactive management of cyber risks

Avoid downtime and save costs

Managing vulnerabilities and critical updates with Patch Management

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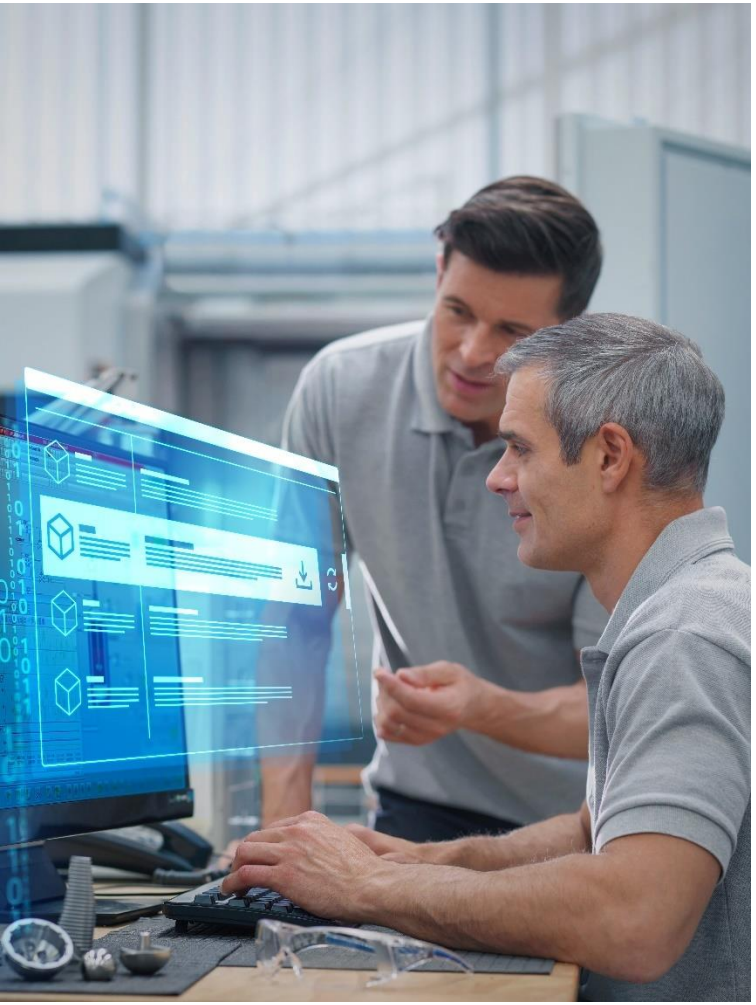

Patch Management

The installation of patches is the appropriate reaction to close vulnerabilities in software. Thus, patches contribute to stable plant operation. But patching is manual work and an incompatible patch can cause unplanned downtimes.

Siemens offers Patch Management of security patches and critical updates in Microsoft products for SIMATIC PCS 7 to simplify the patch process on the plant.

How does it work?

Step 1: The monthly released security patches for Microsoft products are tested and verified for compatibility with SIMATIC PCS 7

Step 2: This information is published as metadata via a central update server (WSUS – Windows Software Update Services), which sends the information automatically to the local WSUS server in the plant

Step 3: The customer receives a notification and can download the approved patches directly from Microsoft

Main value drivers

Save time and cost due to reduction of manual work on-site

Minimize risk of human error

Enhanced plant availability

Unleashing the full security potential of your assets with SIMATIC Security Service Packages

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SIMATIC Security Service Packages

Many of the SIMATIC products offer configurations to enhance the security level. However, these configurations are rarely found in the field – often due to a lack of security know-how.

Our industrial security experts support you in unleashing the full potential of your asset's security level with tailored packages for SIMATIC automation systems.

How does it work?

For end-customers

- Site Compliance Test
- Managed Hardening
- Vulnerability Notification Service

For OEMs

- Security Consulting for Machines
- Vulnerability Notification Service

Main value drivers

Transparency over compliance with security standards

State-of-the-art implementation and configuration of security features

Maintaining the security level over the whole lifecycle

Set up and expand knowledge with Training Services

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Training Services

Providing the latest training methods and courses directly from the manufacturer – whether online, in class-room trainings or with a customized training approach. Because industry knowledge enables efficient product use and fast trouble-shooting.

- Trustworthy, comprehensive expert knowledge directly from the manufacturer taught by 300 certified trainers
- Enhanced flexibility due to knowledge transfer in over 200 locations in 60 countries, at your company or in online formats
- Sustainable and continuous learning thanks to different learning approaches using latest methods and technologies, as well as specially-developed training equipment

Set up and expand knowledge with Training Services

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Training Services

Digital Learning

Class-room Trainings

Set up and expand knowledge with Training Services

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Training Services

Digital Learning

Class-room Trainings

Knowledge you can always find – Free and comprehensive with SITRAIN open

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SITRAIN open

- SITRAIN open bundles useful information, worthwhile data, and up-to-date expert knowledge about Siemens products for industry. Search it anytime, find anything
- Technical data, FAQs, manuals – Go online and help yourself to over 300,000 entries in up to six languages
- Benefit from free project data from around 2,000 application examples, adapted to your own application

How does it work?

Question → Search → Find → Learn

Main value drivers

- Comprehensive knowledge base available 24/7
- Reduce downtimes with fast and efficient solutions and trouble-shooting
- Benefit from the knowledge of the Siemens experts and over 600,000 users in the technical forum

Learning in the digital age –
When and wherever you want with SITRAIN access

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Ingenuity for life

SITRAIN access

- Constantly growing range of exclusive, enriched expert knowledge directly from the manufacturer
- Suitable content for various industries and use cases, for beginners and experts
- Continuous and effective learning anytime and anywhere
- Modular learning nuggets in various multimedia formats
- Sustainable and transparent learning success for learners and managers through the manager role, checkpoints and numerous exercises
- A community with SITRAIN experts and other learners to network and exchange with

How does it work?

Just login — and get started — anywhere and anytime

Main value drivers

Ensure a high level of knowledge with a constantly growing range of content

Enable a continuous, and transparent learning process – anywhere and anytime

Create a sustainable learning success and a new learning culture with maximum motivation

Vizendo Virtual Training Solutions – Turn your digital assets into qualification

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Vizendo Virtual Training Solutions

Increasing complexity in manufacturing is one of the biggest challenges for industrial companies. More and more complex production steps have to be implemented in ever shorter time. Targeted training of employees in their work steps is even becoming more and more important, especially after product or process changes. This requires new training methods that make innovative use of the opportunities offered by digitization and make training easier, faster and more flexible. This is made possible with Vizendo Virtual Training Solutions that contain of the three modules Assessment, Creation and Virtual training.

How does it work?

Main value drivers

- Reduction of training time up to 50%
- Quality improvement by reducing manual assembly mistakes up to 40%
- Reduction of cost intensive pre-production products and physical prototypes

Set up and expand knowledge with Training Services

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Training Services

Digital Learning

Class-room Trainings

Start your journey on the path to Industry 4.0 today with Training for the Digital Enterprise

SIEMENS
Ingenuity for life

Training for the Digital Enterprise

Digitalization is already taking hold in many industries, based on the Digital Enterprise Suite from Siemens, the Digital Twin, and interdisciplinary work on a foundation of standardized data management. Add in advances in automation, and the customer can see it's vital to stay fully up-to-date and turn new opportunities into new successes.

How does it work?

A sophisticated range of courses with modules that build on each other will quickly take the customer to a new level of knowledge.

Modules for the process industry and discrete industry are

- Virtual commissioning
- Automatic code generation
- Basic and advanced courses

Main value drivers

Expert knowledge of over 300 certified trainers with practical experience worldwide

Tailored to individual training needs

Specially-developed training equipment

Get ready for the future with Training for SIMATIC Human Machine Interface (HMI)

SIEMENS
Ingenuity for life

Training for SIMATIC HMI

Siemens Human Machine Interface products are the intelligent answer to the increasingly complex processes in machines and systems. The individual components can be integrated perfectly into an automated plant, using open, standardized interfaces in both hardware and software.

How does it work?

SIMATIC HMI is perfectly tailored to particular needs for operation and observation. The individual components can be perfectly integrated into the automation system.

Training is available for these systems

- SIMATIC WinCC Unified in the TIA Portal
- SIMATIC WinCC in the TIA Portal
- SIMATIC WinCC V7x
- SIMATIC WinCC flexible

Main value drivers

Expert knowledge of over 300 certified trainers with practical experience worldwide

Tailored to individual training needs

Specially-developed training equipment

Learn how to use industrial components efficiently with Training for Communication and Identification Systems

SIEMENS
Ingenuity for life

Training for Communication and Identification Systems

The Communication and Identification Systems courses gives users the expertise in the areas of production control, asset management, tracking & tracing, and supply chain management they need to be able to use the products in question efficiently and safely.

How does it work?

The trainings provide with in-depth knowledge combined with practical clarifications and maximum learning efficiency. They are available for these systems

- **Industrial communication:** PROFINET, Industrial Ethernet, PROFIBUS, OPC UA, Industrial Remote Communication
- **Identification systems:** Code reading systems and RFID systems

Main value drivers

Expert knowledge of over 300 certified trainers with practical experience worldwide

Tailored to individual training needs

Specially-developed training equipment

Protect your digitally connected assets easily with Training for Industrial Security

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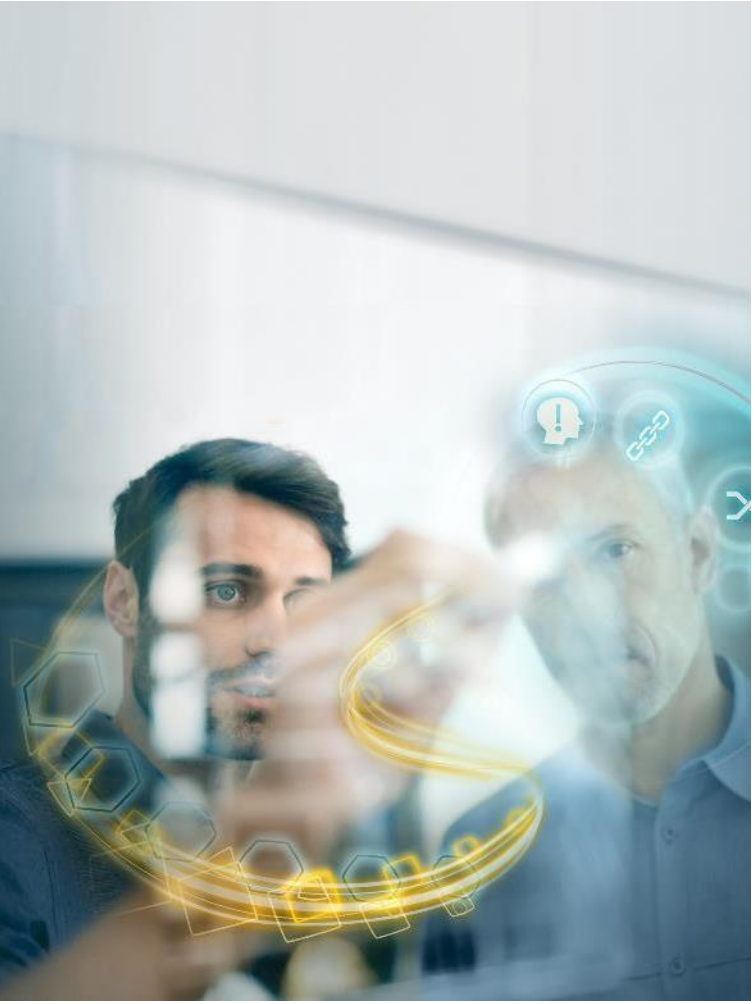

Training for Industrial Security

Security risks impose a need for action. Digitalization and the increasing networking of machines and industrial systems also increases the risk of cyberattack. So appropriate protective measures are imperative, especially for critical infrastructure systems. Industrial security is based on multiple lines of protection and an all-inclusive view.

How does it work?

To make this complex topic easier to manage, SITRAIN offers courses in both factory automation and process automation.

Trainings are available for these systems: Scalance and Ruggedcom

Main value drivers

- Expert knowledge of over 300 certified trainers with practical experience worldwide
- Tailored to individual training needs
- Specially-developed training equipment

Enjoy intuitive usability of modern process control technology with Training for Process Control Systems (PCS)

SIEMENS
Ingenuity for life

Training for Process Control System

The process control systems courses teach fundamental information and thorough, detailed knowledge for both beginners and advanced users. Additionally, all SITRAIN courses include an extensive range of practical exercises so that learners can work intensively and directly on training devices in small groups.

How does it work?

In the SIMATIC PCS courses, Siemens provides both beginners and advanced users with fundamental information and thorough, detailed knowledge about the SIMATIC PCS 7 process control system. In addition, all SITRAIN courses contain the greatest possible proportion of practical exercises.

Training is available for these systems

- SIMATIC PCS 7
- SIMATIC PCS neo

Main value drivers

Expert knowledge of over 300 certified trainers with practical experience worldwide

Tailored to individual training needs

Specially-developed training equipment

Master your digital transformation with Training for Process Instrumentation

SIEMENS
Ingenuity for life

Training for Process Instrumentation

Process instruments for pressure, temperature, flow, and fill measurement form an essential part of any system to automate industrial processes. Pneumatic valve positioners, process controllers and recorders, and process monitoring devices round out the program.

How does it work?

All products and systems are part of the Totally Integrated Automation program, guaranteeing an end-to-end solution for your automation task. Siemens has an extensive range of courses on offer around the world to meet this need.

Trainings are available for the following topics

- Measurements
- Fundamentals and Service
- Weighing and Dosing System
- Ex Protection

Main value drivers

Expert knowledge of over 300 certified trainers with practical experience worldwide

Tailored to individual training needs

Specially-developed training equipment

Master your digital transformation with Training for Industrial Automation Systems

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Ingenuity for life

Training for Industrial Automation Systems

SITRAIN offers courses and learning paths for all aspects of SIMATIC. The emphasis is on training for SIMATIC S7 service and programming.

How does it work?

Besides directly addressing the SIMATIC S7-1500 in the TIA Portal and the SIMATIC S7-300 based on SIMATIC STEP 7 V5.x, the training also has content on programming languages, operator control and monitoring systems, drive technology, industrial communications and safety technology.

Training is available for these systems

- SIMATIC S7-1500, TIA Portal, SIMATIC S7-300/400
- SIMATIC S7-1200




Main value drivers

Expert knowledge of over 300 certified trainers with practical experience worldwide

Tailored to individual training needs

Specially-developed training equipment

Apply programming languages and troubleshoot instantly with Training for Motion Control Systems

Training for Motion Control Systems

In the courses you will learn how to handle the hardware and software components in order to map motion control functions in the program, to use the available programming languages or to carry out any error diagnosis and trouble-shooting. These Motion Control applications can be implemented with SIMOTION, but also within the SIMATIC.

How does it work?

SITRAIN courses will teach you to work with the hardware and software components of SIMOTION, to apply the available programming languages, and how to troubleshoot when needed.

Training is available for these systems

- Motion Control for SIMOTION
- Motion Control for SIMATIC

Main value drivers

Expert knowledge of over 300 certified trainers with practical experience worldwide

Tailored to individual training needs

Specially-developed training equipment

Drives knowledge for practical use with Training for Drives Technology

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Ingenuity for life

Training for Drives Technology

As the core element of the drive system, SIMOTICS can be optimally integrated into the drive train. SITRAIN has a portfolio of training courses that are perfectly matched to your requirements and your plant's lifecycle. SITRAIN offers a unique range of training courses for the basic applications in the sector.

How does it work?

The SITRAIN range of courses for SINAMICS converters offers thorough, detailed knowledge and practical exercises for both beginners and advanced users.

Training is available for these systems

- SINAMICS S120
- SINAMICS G120
- SINAMICS G130/G150/S150
- SINAMICS DCM
- SINAMICS medium-voltage converters
- SIMOTICS motors

Main value drivers

Expert knowledge of over 300 certified trainers with practical experience worldwide

Tailored to individual training needs

Specially-developed training equipment

Develop expertise in service, project planning and programming with Training for CNC Automation Systems

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Ingenuity for life

Training for CNC Automation Systems

SINUMERIK courses will teach you how to use the right components and systems in the best possible ways and with the greatest efficiency. The SINUMERIK CNC controls offer the right solution for every machine concept - from simple CNC standard machines and standardized machine concepts to modular premium machine concepts.

How does it work?

SITRAIN supports in everyday work with SINUMERIK. Reliable decisions, skill and innovative strength – these are the areas where SINUMERIK training can help.

Training is available for these systems

- SINUMERIK 840D sl
- SINUMERIK 840D
- SINUMERIK ONE

Main value drivers

Expert knowledge of over 300 certified trainers with practical experience worldwide

Tailored to individual training needs

Specially-developed training equipment

Drive tomorrow’s infrastructure with Training for energy and building technologies

SIEMENS
Ingenuity for life

Training for energy and building technologies

Data networks in purpose-built facilities are easy to use for building system technology, thanks to the open KNXnet/IP standard. The portfolio covers the entire range of KNX-certified courses in both English and German. The KNX-certified courses focus on designing, commissioning, and maintenance of “KNX” building system technology plant.

How does it work?

SITRAIN provides the answer with ALPHA and SENTRON low-voltage power distribution systems, and industrial switching technology.

Training is available for these areas

- Building technologies
- Energy management

Main value drivers

Expert knowledge of over 300 certified trainers with practical experience worldwide

Tailored to individual training needs

Specially-developed training equipment

Making tomorrow's workforce fit for the future of industry with Siemens Mechatronic Systems Certification Program (SMSCP)

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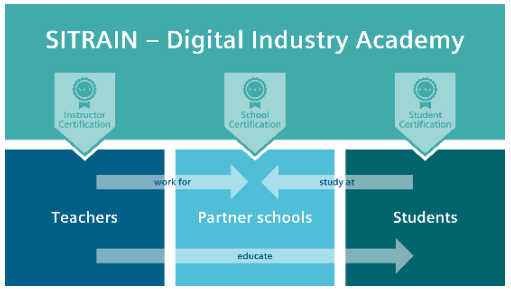
Ingenuity for life

Siemens Mechatronic Certification Program (SMSCP)

All SMSCP courses are designed to be integrated within a high school, college, or university curriculum, or to be implemented as continuing education. Under the systems approach, students learn about the complexities of the system in a holistic fashion including topics of the future such as the digital enterprise.

How does it work?

SMSCP is a train-the-trainer-program: Siemens trains the faculty, the certified faculty teach their students, Siemens certifies the students.



Main value drivers

- Comprehensive trainings approach
- SMSCP meets industry skills requirements
- Increasing the efficiency and productivity of machine operators, technicians and engineers

Master your preventive maintenance skills with Training for specific requirements

SIEMENS
Ingenuity for life

Training for specific requirements

SIPLUS products and systems for specific markets and extraordinary requirements represent high levels of sturdiness, efficiency, and flexibility. SITRAIN helps to learn the detail and other important information about complex connections.

How does it work?

Training is available for these systems

- Analysis of mechanical vibration SIPLUS CMS2000
- Analysis of mechanical vibration with SM 1281 inside SIMATIC S7-1200

Main value drivers

Optimal lifetime utilization of machines and facilities

Effective stocking of spare parts

Cost reduction through planned maintenance

Get the best training results with Training Equipment

SIEMENS
Ingenuity for life

Training Equipment

The certified training equipment is a switchgear assembly which complies with EN 61439-1 in the maintenance and commissioning mode. It comes directly from the manufacturer and always fits to the SITRAIN courses. Furthermore, it supports the hands-on training.

How does it work?

The SITRAIN training equipment is aimed at electrically qualified personnel in the target groups

- Planners
- Assemblers
- Start-up engineers
- Maintenance and service personnel
- Operators

Main value drivers

Expert knowledge of over 300 certified trainers with practical experience worldwide

Tailored to individual training needs

Specially-developed training equipment

Maintain asset performance with Support Services

SIEMENS
Ingenuity for life

Support Services

Answering technical questions and providing product and system support for Siemens products via phone, e-mail or online support websites. Our service experts support customers in maintaining their asset performance.

- Worldwide service expert availability with long-term industry expertise and practical knowledge
- Fast support in case of an emergency with premium support services
- Easy access to product information through our online support database

Maintain asset performance with Support Services

SIEMENS
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Support Services

Online Support

Technical Support

Maintain asset performance with Support Services

SIEMENS
Ingenuity for life

Support Services

Online Support

Technical Support

Easy access to technical information with Siemens Industry Online Support (SIOS)

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Siemens Industry Online Support

Online Support is the information and support portal for all Siemens Industry products and services. Available 24/7 and via mobile app.

How does it work?

Fast, intuitive, around the clock

FAQ/application examples
Technical DF/PD products information, programming, configuration and application examples

Technical information
Videos, manuals, updates, compatibility tool, certificates

Forum
Exchange of information and experiences with other users

Online Support for Siemens Industry Products

Factory Automation	Process Automation
Motion Control	Larges Drives

Main value drivers

- Available 24/7 – in 6 languages and via mobile app
- Fast and trustworthy information and support for all Siemens Industry products
- High-quality editorially maintained FAQ and application examples

Maintain asset performance with Support Services

SIEMENS
Ingenuity for life

Support Services

Online Support

Technical Support

Rapid response from service experts with Technical Support

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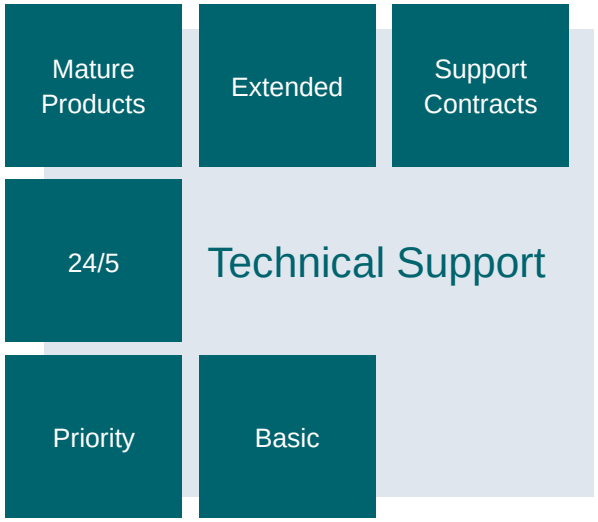
Technical Support

Siemens Technical Support Services provide with comprehensive support direct from the product manufacturer.

How does it work?

The Siemens offering is subdivided into support services tailored to different requirements.



Main value drivers

- Rapid-response support from experts
- Every case takes top priority
- Service round-the-clock

Simple and fast support with Siemens Industry Service Card

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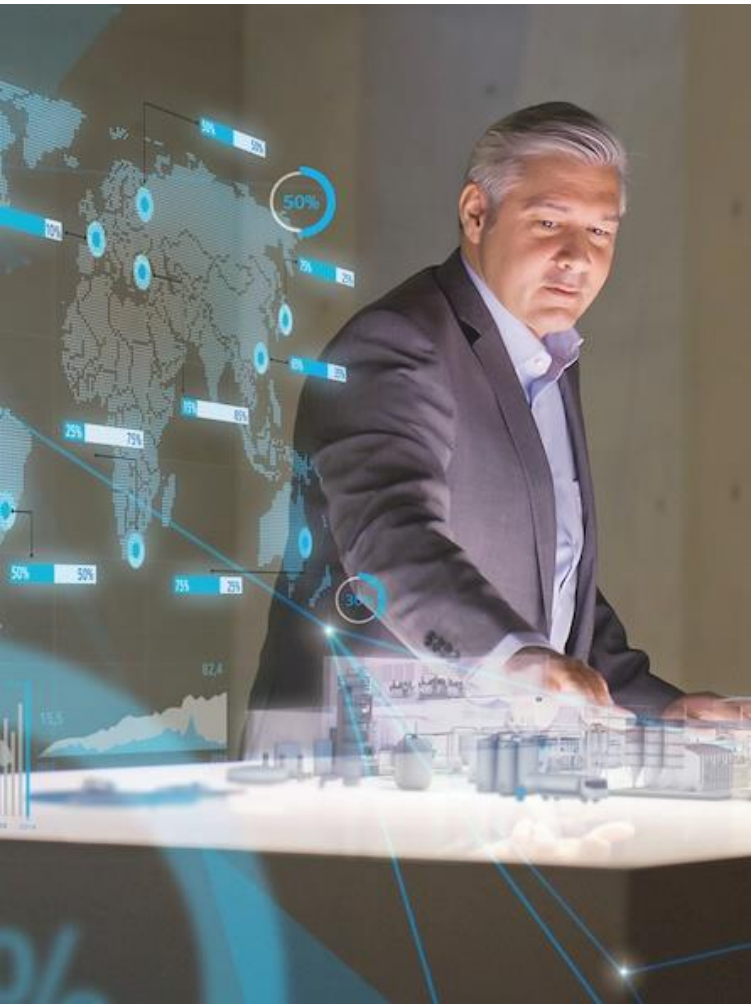
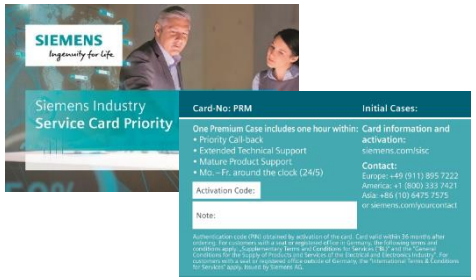


Siemens Industry Service Card

The Siemens Industry Service Card (SISC) is the method of payment for the Service Card – Priority and Premium technical support services.

How does it work?

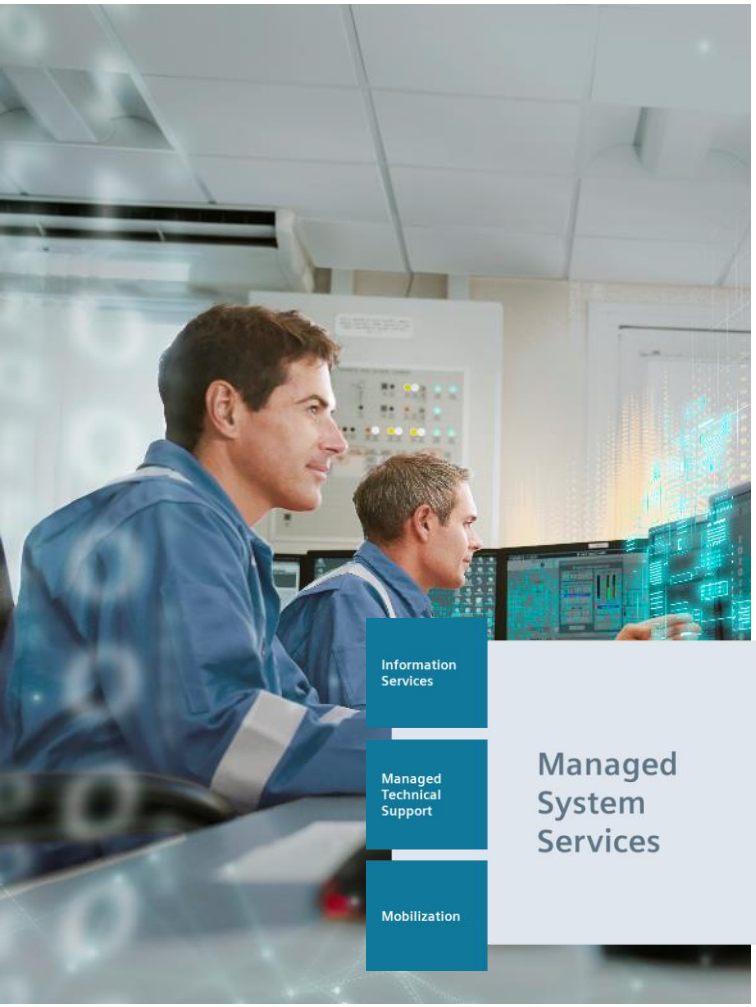
- **Service Card Priority**
  Priority call-back
- **Service Card Premium**
  Priority call-back + 1 hour extended support + 24/5 + Mature Products
- Service card is available with 1 or 5 or 10 cases



Main value drivers

- High planning security and optimized engineering effort
- Fast and comprehensive expert support during engineering, commissioning, operation and modernization phases
- Improved availability of machinery and plants

Individualized support through proactive system services with Managed System Services



Managed System Services

Managed System Services are modularly structured lifecycle services focused on providing comprehensive system support with innovative and proactive services.

How does it work?

- **Module − Mobilization:**
  Setup to learn both plant and maintenance processes and to integrate them into the system
- **Module − Managed Technical Support:**
  A Support Manager prioritizes and coordinates all required service and support activities
- **Module − Information Services:**
  - Reports: Regular status reports, from the initial system acceptance to the final report, over the entire period of the contract
  - Online Information System: Exclusive access to the Online Information System containing all contract-relevant contents

Main value drivers

System-oriented and individualized processing

Centralized coordination ensures efficient processing

Proactive, specific service information

Maintain availability and performance with Field and Maintenance Services

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Ingenuity for life

Field and Maintenance Services

Assisting with commissioning and maintenance of industrial facilities. Comprehensive maintenance concepts and individual maintenance contracts maximize plant availability and performance.

- Minimized unplanned downtimes thanks to customized maintenance intervals
- Maximized service life of installed products and systems
- Fast expert support with an individual maintenance contract

Maintain availability and performance with Field and Maintenance Services

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Ingenuity for life

Field and Maintenance Services

- Field Services
- Commissioning
- Preventive Maintenance
- Instruments and Tools
- Remote Services
- Inspection
- Corrective Maintenance

Maintain availability and performance with Field and Maintenance Services

SIEMENS
Ingenuity for life

Field and Maintenance Services

- **Field Services**
- Remote Services
- Commissioning
- Inspection
- Preventive Maintenance
- Corrective Maintenance
- Instruments and Tools

Fast service expert support with 24/7 On-Call Service

24/7 On-Call Service

Whenever technical faults or queries arise, it is important that operations and maintenance personnel can rely on quick and efficient assistance. With On-call Support we address your demand for Siemens to be “just a phone call away”.

How does it work?

A service contract defines individual service hours and reaction times for certain products

- **Call-Back-Time:** Time period between Customer service inquiry and call-back by Siemens
- **Start-Departure-Dime:** Time period between the mutual decision on the next steps and the start of the departure of a service technician
- **Onsite-Arrival-Time:** Time period between the mutual decision on the next steps and the arrival of a service technician of Siemens at the Customer

Main value drivers

- Worldwide availability of service experts 365 days a year 24 hours a day
- Faster trouble-shooting enabled by priority treatment
- Reduced costs due to less long unplanned downtimes

Maintain availability and performance with Field and Maintenance Services

SIEMENS
Ingenuity for life

Field and Maintenance Services

- Field Services
- Commissioning
- Preventive Maintenance
- Instruments and Tools
- Remote Services
- Inspection
- Corrective Maintenance

Fast downtime recovery by support with Remote Support

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Remote Support

Siemens is offering Remote Support as an add-on for on-call service contracts for SINAMICS low-voltage converters.

How does it work?

Based on customer request, a remote connection can be established to the customer's system, enabling data analysis, error detection and in several cases also direct trouble-shooting.

Main value drivers

- Shorten unplanned downtimes
- Reduced service intervention cost
- High data security

Increased plant availability with SINUMERIK Remote Service

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SINUMERIK Remote Service

SINUMERIK Remote Service is offered as add-on for local service contracts for SINUMERIK 828D/840D control systems. Based on service times that can be individually adapted and prioritized processing of the inquiry, this service offers secure and reliable remote operation as well as monitoring to provide extensive fault diagnostics and trouble-shooting by remote experts.

How does it work?

- Local service contracts from Siemens
- Remote service facilitated via the cRSP remote platform using an industrial PC as gateway
- Standardized process for service calls with remote fault analysis and trouble-shooting support

Main value drivers

Reduced costs through fast service support and increased availability

Reduction of unplanned downtimes based on fast remote support and fault analysis by Siemens service experts

Enhanced sustainability

Fast and worldwide availability of expert know-how with Remote Services for Process Automation

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Remote Services for Process Automation

The idea behind the Remote Services is to provide optimum, system-specific support for the SIMATIC automation system from a remote location. As part of the modules offered, the customer will not only be provided the remote infrastructure, but support and maintenance are also already included.

How does it work?

- **Use Case 1 – Remote Assisted Collaboration:** Transmission of audio/video/chat on PC SIPIX SD mobile tablets, optionally with data glasses
- **Use Case 2 – Remote Desktop Sharing:** The Siemens expert directly accesses the engineering software (e.g. SIMATIC PCS 7) and from there the connected systems

Main value drivers

- Fast and worldwide availability of expert know-how
- Based on proven IT-security concepts for the industry
- Innovative service concept

Fast and worldwide availability of expert know-how with Remote Services for Process Instrumentation

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Ingenuity for life

Remote Services for Process Instrumentation

The idea behind the Remote Services is to provide optimum, system-specific support for the Process instrumentation from a remote location. As part of the modules offered, the customer will not only be provided the remote infrastructure, but support and maintenance are also already included.

How does it work?

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Main value drivers

- Fast and worldwide availability of expert know-how
- Based on proven IT-security concepts for the industry
- Innovative service concept

Maintain availability and performance with Field and Maintenance Services

SIEMENS
Ingenuity for life

Field and Maintenance Services

- Field Services
- Commissioning
- Preventive Maintenance
- Instruments and Tools
- Remote Services
- Inspection
- Corrective Maintenance

Ensured functionality and reliability with Commissioning for Drives

SIEMENS
Ingenuity for life

Commissioning for Drives

Complex machines and industrial facilities need to be expertly commissioned to ensure functionality and operational safety throughout the entire product lifecycle. This is the task of our global network of qualified service personnel which performs commissioning for drives.

How does it work?

The commissioning of a drive consists of a large number of activities, including for example

- Checking the installation
- Integration tests on drive and components
- Parameterization
- Trial operation
- Instruction and training of personnel

Main value drivers

High flexibility and cost-effectiveness due to global network of commissioning experts

Highly qualified experts for machines and systems

Cross-industrial machine and system know-how

Ensured functionality and reliability with Commissioning for Motors

SIEMENS
Ingenuity for life

Commissioning for Motors

Complex machines and industrial facilities need to be expertly commissioned to ensure functionality and operational safety throughout the entire product lifecycle. This is the task of our global network of qualified service personnel which performs commissioning for motors.

How does it work?

- **Mechanical alignment of the motor** is checked using specialized measuring equipment. We correct any incorrect alignment identified during this procedure
- **Stator and rotor winding** are checked and evaluated. In this context, any damage caused by transport or storage is determined
- **Auxiliary drives, auxiliary plants and motor protection** are parameterized and checked
- Further options that can be ordered individually

Main value drivers

High flexibility and cost-effectiveness due to global network of commissioning experts

Highly qualified experts for machines and systems

Cross-industrial machine and system know-how

High operational reliability with Commissioning for Machine Tools

SIEMENS
Ingenuity for life

Commissioning for Machine Tools

The correct commissioning of machine tools helps to ensure the functionality and operational reliability over the complete life cycle of machines and industrial facilities. This is the task of our global network of qualified service personnel which performs commissioning for machine tools.

How does it work?

The commissioning of a machine tool consists of a large number of activities using real components, including for example

- Combining the mechanics, electronics and automation program
- Design testing and parameterization
- Trial operation and validation

Main value drivers

High flexibility and cost-effectiveness due to global network of commissioning experts

Highly qualified experts for machines and systems

Maintain availability and performance with Field and Maintenance Services

SIEMENS
Ingenuity for life

Field and Maintenance Services

- Field Services
- Commissioning
- Preventive Maintenance
- Instruments and Tools
- Remote Services
- **Inspection**
- Corrective Maintenance

Optimized plant and system availability with Inspection for Drives

SIEMENS
Ingenuity for life

Inspection for Drives

Inspections are fundamental for the assessment of the actual state of your machine or industrial facility. This includes the assessment of the causes for wear and tear and the demonstration of adequate maintenance measures. To get the best possible results, Siemens Services experts adapt all inspection intervals to the specific operating conditions and environments of each drive.

How does it work?

All converters should be examined or checked by experts in the maintenance and inspection intervals agreed with the customer. Inspection activities can include

- Review of current operating information
- Determination of the plant and device state
- Analysis and evaluation of vulnerabilities
- Derivation of the necessary maintenance measures

Main value drivers

- Optimal performance
- Reliable production conditions
- Scheduled maintenance shutdowns instead of unplanned production downtimes

Optimized plant and system availability with Inspection for Motors

Inspection for Motors

Inspections are fundamental for the assessment of the actual state of your machine or industrial facility. This includes the assessment of the causes for wear and tear and the demonstration of adequate maintenance measures. To get the best possible results, Siemens Services experts adapt all inspection intervals to the specific operating conditions and environments of each motor.

How does it work?

All motors should be examined or checked by experts in inspection intervals as specified in the operating instructions or agreed with the customer, including various activities

- Review of motor and current operating information
- Inspections and measurements with documentation, e.g. speed, motor torque, power consumption, noises
- Error analysis
- Analysis and evaluation of vulnerabilities
- Derivation of the necessary maintenance measures

Main value drivers

- Optimal performance
- Reliable production conditions
- Scheduled maintenance shutdowns instead of unplanned production downtimes

Up-to-date spare parts stock with Function Check for Spare Parts

SIEMENS
Ingenuity for life

Function Check for Spare Parts

The components are checked for reliable functioning.
If a fault is detected, Siemens immediately repairs it.

How does it work?

In the first step the spare part is cleaned. Subsequently, all known improvements in hardware and software/firmware from development, production, suppliers, service and quality management are carried out at Siemens. With the extensive inspection concept of the serial manufacturing, all functions of the software, firmware, ASICs, complex and not so complex blocks are checked subsequently.

If an error is detected during the check, the error will be determined and repaired without queries and process interruption, at the usual cost of repair.

Main value drivers

- Spare part stock is up-to-date
- Reduced lifecycle costs

Maintain availability and performance with Field and Maintenance Services

SIEMENS
Ingenuity for life

Field and Maintenance Services

- Field Services
- Remote Services
- Commissioning
- Inspection
- **Preventive Maintenance**
- Corrective Maintenance
- Instruments and Tools

Enhanced availability with Preventive Maintenance for Drives

SIEMENS
Ingenuity for life

Preventive Maintenance for Drives

Our service experts adapt maintenance intervals to suit your plant's requirements, calculate actual maintenance requirements, and identify opportunities to improve the operating conditions of your drives.

How does it work?

Comprehensive service activities are developed specific to the customer's needs and include

- Review of current operating information and maintenance activities
- Calculation of maintenance requirements
- Analysis and identification of areas for improvement
- Maintenance recommendations for the complete lifecycle

Main value drivers

- Enhanced availability
- Optimal performance
- Reliable production conditions

Enhanced availability with Preventive Maintenance for Motors

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Main value drivers

- Enhanced availability
- Optimal performance
- Reliable production conditions

Measurement possible without permanently installed system with Mobile Diagnostics for Drive Systems

SIEMENS
Ingenuity for life

Mobile Diagnostics for Drive Systems

Mobile Diagnostics makes it possible to detect changes in the operating states early and to take according counter-measures. Expensive plant downtime and production losses can thus be avoided.

How does it work?

- Measurements are performed using handheld measuring devices at contractually agreed time intervals
- Assessment of the actual plant/system state on-site summarized in a detailed expert report with service recommendation
- Siemens experts perform the measurements and analyze the data

Main value drivers

- Create sustainability
- Shorten unplanned downtimes
- Reduced service intervention cost

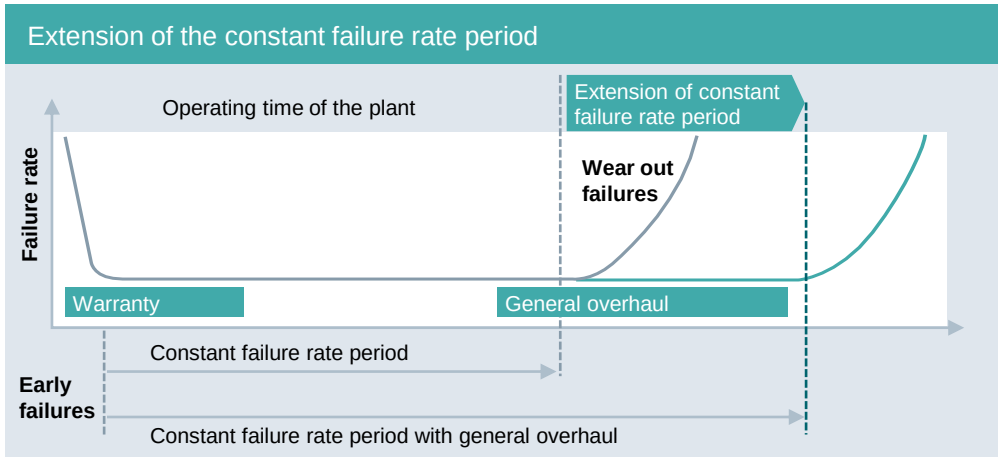
Reduced unplanned downtime with General Overhaul for Machine Tools

SIEMENS
Ingenuity for life

General Overhaul for Machine Tools

With the general overhaul the customers protect their production from failures. The consistent improvement of the processes and checks helps to continuously improve the quality. Siemens manufactures products by strictly complying with the applicable quality regulations. A general overhaul prolongs the runtime of the machines/plants and secures the investments.

How does it work?



Main value drivers

- Reduced unplanned plant downtime
- Increased production reliability
- Extended availability of machines/ plants/systems

Increase system availability of SINUMERIK Integrate installations with Database Services

SIEMENS
Ingenuity for life

Database Services

Database Services supports end customers who use SINUMERIK Integrate products to optimize their manufacturing process. Database Services provides a Siemens Expert who will support the customer in backing up, maintaining and updating the SINUMERIK Integrate database.

How does it work?

The customer decides on how and when the service will be provided. The service can be conducted remotely or on-site. Six sessions over a period of three years will be scheduled with the customer. As part of the service, a selective data back-up of the SINUMERIK Integrate system will be performed. This service also includes memory optimization and a log file analysis.

Main value drivers

- Enhanced availability
- Reduced costs

Reliable measurement with Calibration Services

SIEMENS
Ingenuity for life

Calibration Services

Measuring, positioning, recording, and controlling are important parameters in all industrial processes. That's why process instruments need a delivery the highest levels of precisions and reliability. Calibration measuring devices is an important production and competitive activity due to steadily increasing demands on reliability, availability and performance.

How does it work?

- **Module − Off-site Calibration:** Calibration services for pressure, temperature and flow meters
- **Module − On-site Calibration:** Calibrations for pressure and temperature measuring instruments as well as for belt scales

Main value drivers

- Safety by regular calibration
- High-quality production
- Increasing plant efficiency

Planning, implementation and documentation of all service activities with Lifecycle Management Suite

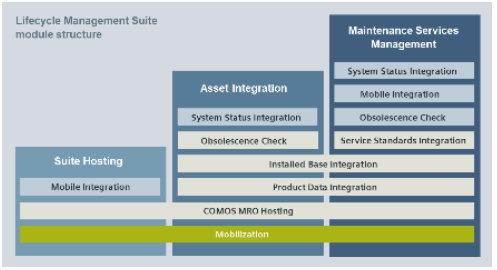
SIEMENS
Ingenuity for life

Lifecycle Management Suite

The Lifecycle Management Suite optimizes the planning, execution and documentation of all service activities for plant maintenance. The modular structure allows a needs-based selection for different users.

How does it work?

- **Module − Mobilization:** Basis for all modules
- **Module − Suite Hosting:** Cloud-based COMOS MRO software with support and software update services
- **Module − Asset Integration:** Suite Hosting plus Obsolescence Check, Installed Base Integration and Product Data Integration
- **Module − Maintenance Services Management:** Based on Asset Integration plus Service Standards Integration



Basis for all modules Defined function per module Additional option per module

Main value drivers

Online system setup allows the immediate provision of all functions

Efficient import and analysis functions create transparency

Optimal maintenance

Maintain availability and performance with Field and Maintenance Services

SIEMENS
Ingenuity for life

Field and Maintenance Services

- Field Services
- Commissioning
- Preventive Maintenance
- Instruments and Tools
- Remote Services
- Inspection
- **Corrective Maintenance**

Enhanced availability of machines and plants with Corrective Maintenance for Drives

SIEMENS
Ingenuity for life

Corrective Maintenance for Drives

If an unexpected malfunction should occur despite preventive maintenance work, Siemens service experts around the world are standing by to help with reactive repairs, in the form of an emergency service or by remote, as required.

How does it work?

Corrective maintenance services include error diagnosis, exchange of defective parts, refitting or trouble-shooting in application software.

Also, customized services for drives are available

- Acceptance of fault reports: reachability, call-back times
- Stand-by times
- Service periods
- Reaction times, arrival times
- Charging methods

All services can also be part of an individual customized service contract.

Main value drivers

Customized service contract option (individually or combined)

Cost reduction by savings in personnel and spare parts stocks

24

Enhanced availability

Enhanced availability of machines and plants with Corrective Maintenance for Motors

SIEMENS
Ingenuity for life

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Cost reduction by savings in personnel and spare parts stocks

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Enhanced availability

Maintain availability and performance with Field and Maintenance Services

SIEMENS
Ingenuity for life

Field and Maintenance Services

- Field Services
- Remote Services
- Commissioning
- Inspection
- Preventive Maintenance
- Corrective Maintenance
- **Instruments and Tools**

Always the best equipment with Instruments and Tools – Rental

Instruments and Tools – Rental

SIRENT from Industry Services is a range of products and services that provides cost-effective access to measuring equipment, tools and occupational health and safety articles that meet all of the relevant requirements.

Renting with SIRENT brings access to approximately 3,000 different items for rental, from measuring and test equipment to standard and special-purpose tools (and the associated accessories, which we of course supply at the same time) with no investment required.

How does it work?

SIRENT rental customers always have access as required to technically reliable equipment that has been inspected in accordance with the applicable regulations. Rental fees reflect the term of renting. The customer can thus control both factors and can match the term of renting to the duration of the project or service assignment concerned.

Main value drivers

- Cost-effective access to technical equipment
- Pool of 3,000 different items
- Inspected equipment in accordance with the applicable regulations

Cost-effective access to measuring equipment with Instruments and Tools – Sales

SIEMENS
Ingenuity for life

Instruments and Tools – Sales

SIRENT from Industry Services is a range of products and services that provides cost-effective access to measuring equipment, tools and occupational health and safety articles that meet all of the relevant requirements.

Sometimes the numbers for renting just do not add up – for example in the case of small tools or safety boots. Our customers are accordingly also able to purchase products like these from SIRENT on favorable terms.

SIRENT offers access to a further 3,000 different sale items optimally matched to our rental equipment pool.

SIRENT is in addition an exclusive supplier for selected Siemens measuring equipment (for example pyrometers) and official distributor of high-quality products from manufacturers including Fluke, Megger and Tektronix.

Main value drivers

- Procurement of additional items as needed
- Access to 3,000 different sale items for the service, modernization or assembly business
- Cost-effective access

Optimize the entire tool logistics process with Instruments and Tools – Supply Solution

SIEMENS
Ingenuity for life

Instruments and Tools – Supply Solution

With SIRENT instrument and tool supply “powered by WebLogX tools” Siemens Industry Services develops and operates a continuous supply solution matched to the specific requirements of each case in order to optimize the entire customer tool logistics process for the long-term.

How does it work?

Customers order the material they require via a customer-specific (exclusive) online-shop (via intranet or internet) irrespective of whether they are calling devices from their own stock (loan), purchasing consumables (sale) and/or requesting that equipment be ordered from the SIRENT rental pool (renting).

Main value drivers

- Reduced assets and costs by inventory optimization
- Improved process and cost transparency
- Less administration effort for equipment management and test cycle monitoring

Providing a mobile repair infrastructure with Instruments and Tools – Container Solution

SIEMENS
Ingenuity for life

Instruments and Tools – Container Solution

Just take a standard shipping container (or several) and specify the individual modules you need us to install to create a mobile workshop, for example, or a tool or replacement parts store ready to use wherever in the world you need it.

How does it work?

We are a professional logistics service provider too, so you receive not so much a mobile workshop as a perfect repair infrastructure on the ground wherever you need it.

We can even see to a continuous top-up supply of tools, consumables and replacement parts in accordance with the requirements and region concerned.

Our customer advisors will be happy to discuss with you one-to-one what a container or store solution tailored to your requirements might look like.

Main value drivers

- Supply of tested, high-quality equipment only
- Reduced costs and coordination effort
- Increased efficiency in quality and safety management

Maintain availability and performance with Spare Parts Services

SIEMENS
Ingenuity for life

Spare Parts Services

Securing the availability of spare parts and providing a reliable and fast supply worldwide. Individual spare parts packages and concepts ensure economical inventory management.

- Enhanced spare parts inventory with an optimized balance between your own stock and spares on demand
- Minimized downtimes in emergency cases due to high spare parts availability and fast delivery options
- Reduced costs due to shorter downtimes and less spare part assets

Maintain availability and performance with Spare Parts Services

SIEMENS
Ingenuity for life

Spare Parts Services

- Spare Parts Supply
- Spare Parts Package
- Spare Parts Concepts
- Extended Warranty

Maintain availability and performance with Spare Parts Services

SIEMENS
Ingenuity for life

Spare Parts Services

- **Spare Parts Supply**
- Spare Parts Package
- Spare Parts Concepts
- Extended Warranty

Worldwide spare parts availability with Spare Parts Supply

SIEMENS
Ingenuity for life

Spare Parts Supply

Siemens Industry's spare parts supply is available worldwide and provide smooth and fast delivery of spare parts – and thus optimal plant availability. Most original spare parts from Siemens are available for up to ten years after a product is discontinued – for drive and automation systems, for machine tools and production machinery.

How does it work?

- Identify the right spare parts via your browser or with the convenience of the Industry Online Support app
- Order it directly via Mall or your Siemens contact

Step 1
Identification via Spares on web

Step 2
Order it directly via Mall or Siemens contact

Main value drivers

- Maximized plant availability by having critical spares on stock
- Reduced costs due to lower spare parts inventory
- Fast supply of spare parts in case of an emergency

Maintain availability and performance with Spare Parts Services

SIEMENS
Ingenuity for life

Spare Parts Services

Spare Parts Supply

Spare Parts Package

Spare Parts Concepts

Extended Warranty

Minimized unplanned downtime with Spare Parts Packages for Drives

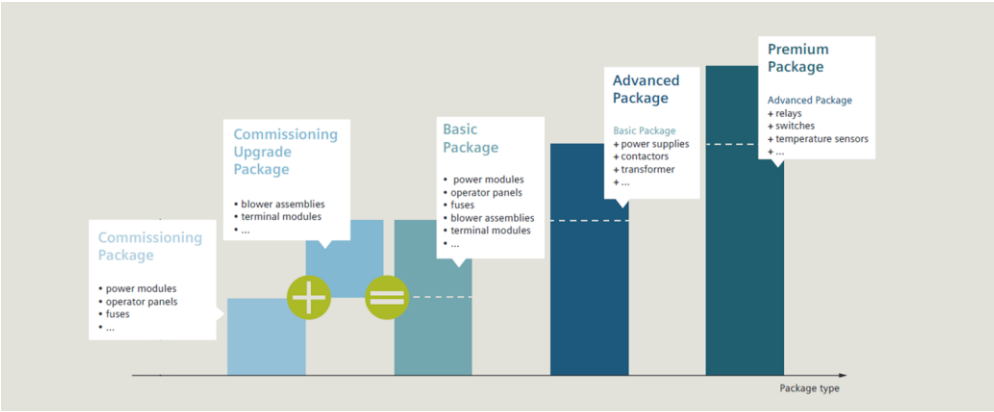
SIEMENS
Ingenuity for life

Spare Parts Packages for Drives

Since not all spare parts can be kept in stock at all times, Siemens is offering a preventive measure for spare parts provisioning on the customer's premises with optimized spare parts packages for individual products.

How does it work?

The customer can identify the individual components in the spare parts packages with Spares On Web information tool. There are comprehensive information about spare parts for almost all current Siemens drives.



Main value drivers

- Maximizing plant availability
- Reducing the risk of long downtimes due to a missing spare part
- Lower costs due to optimized spare parts stock

Minimized unplanned downtime with Spare Parts Packages for Motors

SIEMENS
Ingenuity for life

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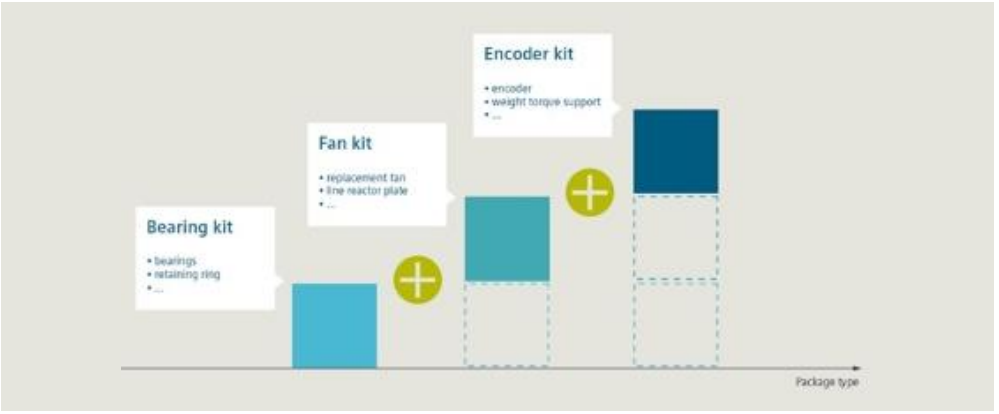

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Maintain availability and performance with Spare Parts Services

SIEMENS
Ingenuity for life

Spare Parts Services

Spare Parts Supply

Spare Parts Package

Spare Parts Concepts

Extended Warranty

Highest degree of plant availability with Asset Optimization Services

SIEMENS
Ingenuity for life

Asset Optimization Services

The Asset Optimization Services take a structured and systematic approach to the comprehensive optimization of spare parts supply. The individual phases are designed as modules in our service portfolio, so that they can be sourced individually as needed.

Analysis → Concept → Implementation → Operation

How does it work?

- **Phase 1 – Analysis:** Analysis of plant and stock inventories, inventory comparison and report
- **Phase 2 – Concept:** Requirements analysis, spare parts concept and calculation
- **Phase 3 – Implementation:** Adjustment/build-up of inventory structures, inventory adjustment
- **Phase 4 – Operation:** Continuous supply of spare parts, cyclical analysis, inventory reporting

Main value drivers

- Ensured availability
- Reduce costs
- Optimized asset management
- Enhanced sustainability

Attractive prices for spare parts with Product Upgrade Service for Drives

SIEMENS
Ingenuity for life

Product Upgrade Service for Drives

To ensure longer availability, Siemens offers a component upgrade at favorable conditions. The Product Upgrade Service for Drives is considered to be the replacement of outdated components with up-to-date innovative components.

How does it work?

The Product Upgrade Service for Drives is available for the following Siemens product families

- SINUMERIK
- SIMODRIVE
- SINAMICS
- MASTERDRIVES
- MICROMASTER

Main value drivers

Price advantage for spare parts thanks to upgrade service

Avoidance of component failures due to wear and ageing

Avoidance of machine downtimes due to unavailable spare parts

Attractive prices for spare parts with Product Upgrade Service for Machine Tools

SIEMENS
Ingenuity for life

Product Upgrade Service for Machine Tools

To ensure longer availability, Siemens offers a component upgrade at favorable conditions. The Product Upgrade Service for Machine Tools is considered to be the replacement of “older” components with “newer” innovative components.

How does it work?

- The Product Upgrade Service for Machine Tools is available for the following Siemens product families
  - SINUMERIK
  - SIMODRIVE
  - SINAMICS
- In order to receive the price advantage the older components need to be handed over to Siemens

Main value drivers

- Price advantage for spare parts thanks to upgrade service
- Avoidance of component failures due to wear and ageing
- Avoidance of machine downtimes due to unavailable spare parts

Ensuring the availability of spare parts with Extended Spare Parts Option (ESO)

SIEMENS
Ingenuity for life

Extended Spare Parts Option

The Extended Spare Parts Option ensures the provision of spare parts with priority delivery.

The exclusive provisioning – at a flat rate – consists of

- Ensuring the availability of required spare parts
- Fast provision on demand
- Wide-area coverage of Siemens products

How does it work?

- Ensured availability for the spare parts you select thanks to exclusive stocking at Siemens
- Reduced storage costs and tied-up capital thanks to storage of spare parts at the manufacturer's facility
- No obligation to purchase spare parts during or after the end of the contract period
- Optimal spare parts maintenance by manufacturer with a straightforward ordering process and simple price calculation

Main value drivers

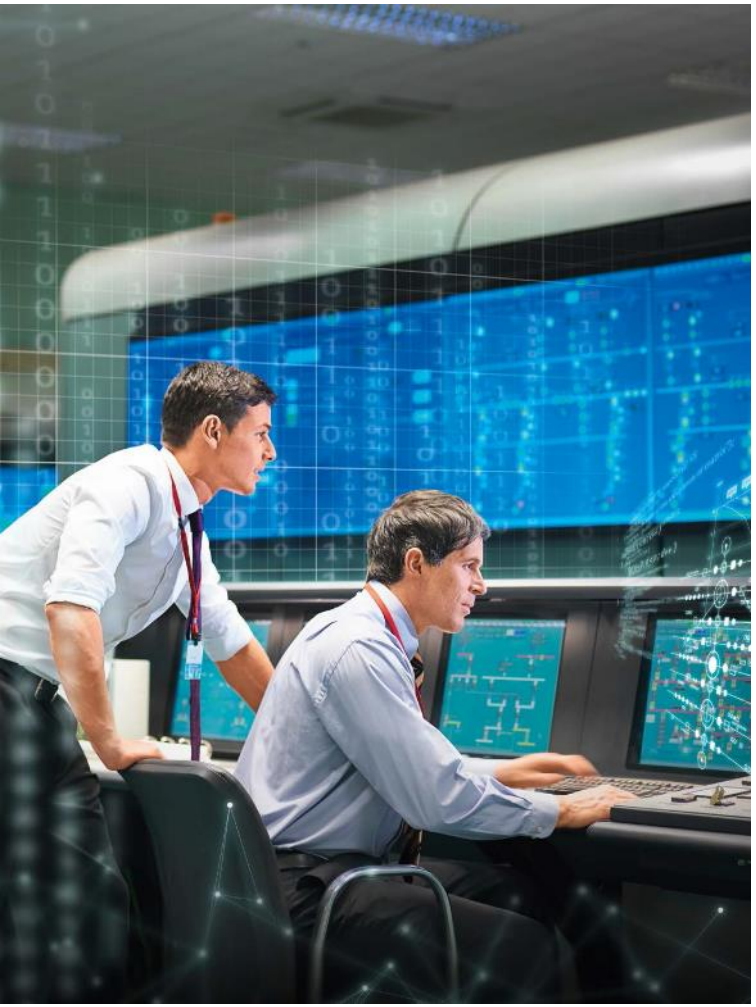
High availability and retrieval of spare parts without maintaining your own inventories

Improved cost transparency for the OPEX of an automation system

Maximized production space and minimized spare parts storage space

Expert support and sustainable investment protection with Legacy System Services

SIEMENS
Ingenuity for life



Legacy System Services

Legacy System Services bridge the gap before a scheduled plant upgrade for the process control technology based on SIMATIC PCS 7. Selected components from the product range of obsolete versions of SIMATIC PCS 7, together with the contractually assured technical support, ensure that an existing plant can continue operating for a period to be determined.

How does it work?

- **Module − System Support:** Contract-based assurance of technical support for SIMATIC PCS 7 V(x-2)
- **Module − Product Delivery:** Access to defined, obsolete hardware and software components in the SIMATIC PCS 7 distributed control system

Legacy System Services

Main value drivers

- Proactive support
- Investment protection
- Cost transparency

Maintain availability and performance with Spare Parts Services

SIEMENS
Ingenuity for life

Spare Parts Services

Spare Parts Supply

Spare Parts Package

Spare Parts Concepts

Extended Warranty

Extended service of SINAMICS Converters with Service Protect

Service Protect

- Service case coverage of your SINAMICS converter can be extended for an additional period of 3 or 5 years
- An approved service case within the contract term is followed by a free of charge exchange or repair of the registered product
- Available for SINAMICS G, SINAMICS S and SINAMICS V converter ranges

How does it work?

- Common order process as usual (Mall, SAP, EDI, etc.)
  - Available via the usual Siemens distribution partners and/or WebShops
- Service is supplied like a physical hardware product with an activation card for the customer
- Product registration online by the customer via https://myregistration.siemens.com/

Main value drivers

- Ensure availability
- Reduce costs
- Optimize asset management

Lower economical risks with Extended Exchange Option (EEO) for Automation Systems

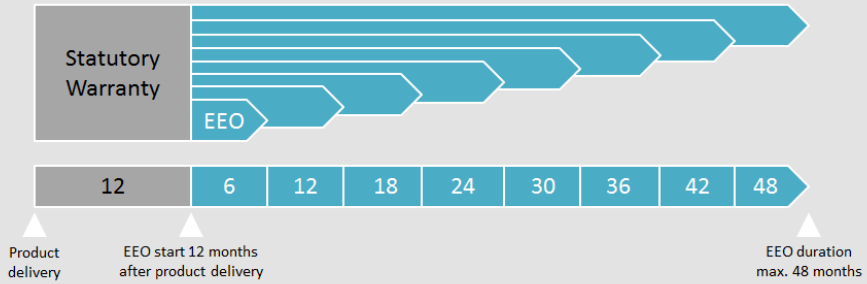
SIEMENS
Ingenuity for life

EEO for Automation Systems

EEO is a replacement option for defect products with original spare parts up to 60 months after delivery out of Siemens factory.

How does it work?

- Length of contract selectable in 6-months steps and onetime renewable until the maximum duration of 48 months
- EEO is available for up to 12 months after delivery
- Submission of a transferable certificate as confirmation of the ordered EEO



Main value drivers

- Higher transparency for the TCO
- Lower economic risk
- Comprehensive product range with same extension conditions

Reduced economic risk and cost transparency in operation with Extended Exchange Option for Process Instrumentation

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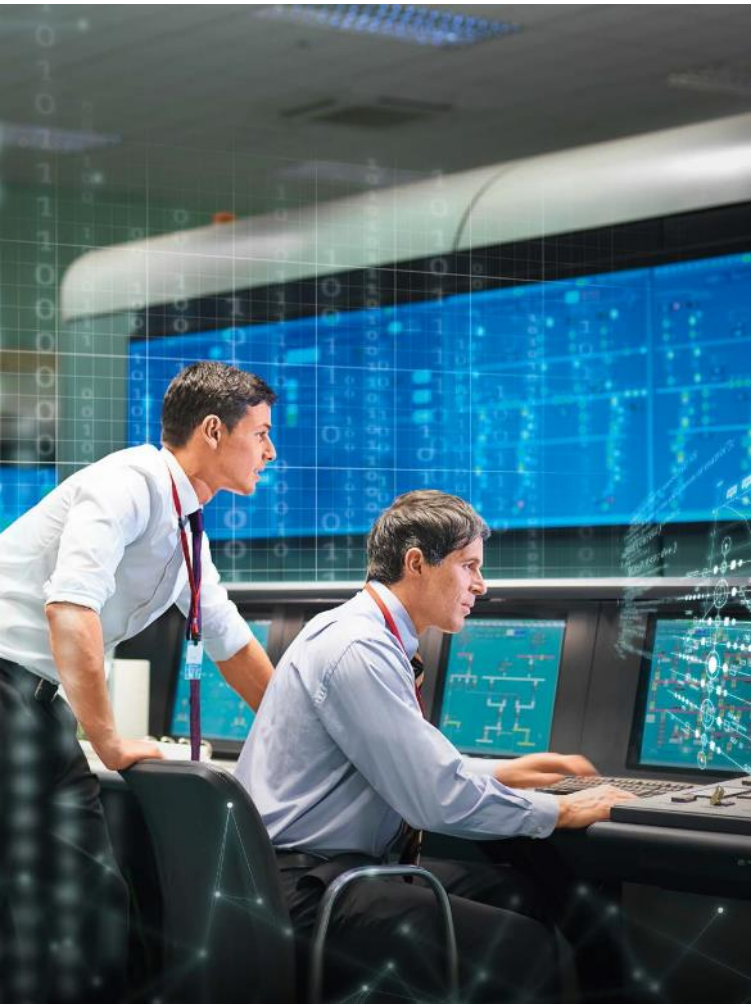
Ingenuity for life

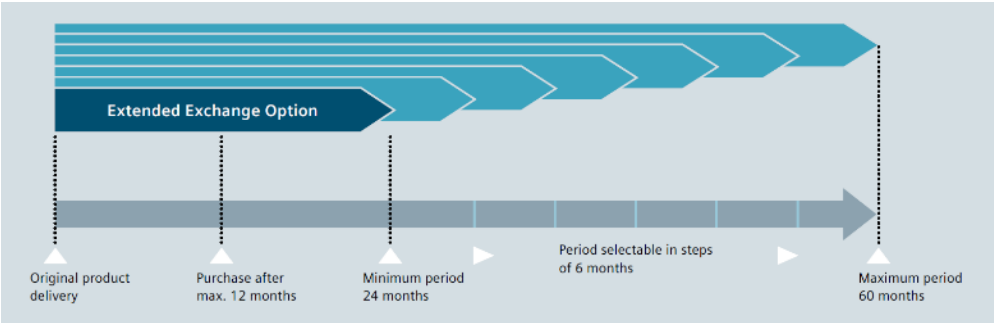


EEO for Process Instrumentation

The Extended Exchange Option offers the time-extended replacement of defective products and systems that have failed in the course of intended use, e.g. due to material defects.

How does it work?

The EEO can be purchased within 1 year after product delivery. The contract period is 6 to 48 months, selectable in steps of 6 months. The EEO period starts 12 months after product delivery. Within the selected time period the customer will receive free replacement for defective products that are covered by the EEO.



Main value drivers

- Greater transparency of the operating costs of a machine or plant
- Reduction of economic risk thanks to improved plannability
- Adaptation to specific needs by way of product selection and flexible terms

Restore function of defective products with Repair Services

SIEMENS
Ingenuity for life

Repair Services

Restoring the function of a defective product. This can be done both in-house and locally at the customer's site, and are supported by a global service network. This helps to keep unplanned downtimes to a minimum.

- Reduced unplanned downtimes thanks to customizable repair options
- Fast trouble-shooting in case of an emergency thanks to a worldwide service network
- Reduced costs and time with end-to-end services from one single source

Restore function of defective products with Repair Services

SIEMENS
Ingenuity for life

Repair Services

Standard Repair

Fast repair in case of an emergency with Standard repair

SIEMENS
Ingenuity for life

Standard repair

Even the best components eventually reach the end of their lifecycle. The result: Outages and reduced productivity. A fast repair service and a reliable parts supply are essential if costly downtimes are to be avoided.

More than 1,000 service experts are ready and waiting to help at more than 250 Siemens or certified partner workshops around the world.

How does it work?

Just talk to your Siemens contact about your repair inquiry. Make sure you have the following information to identify the affected product

- Material or product number
- Serial or production number
- Other information from the identification plate (image or photo also acceptable)

Main value drivers

- Worldwide availability of service experts and repair workshops
- Fast repair and delivery times enabled by flexible repair options
- Multivendor repairs are offered for selected components

Extend the lifetime of production assets with Retrofit and Modernization Services

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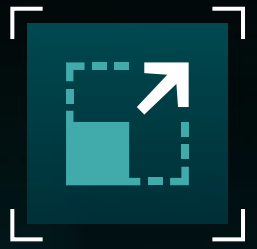
Ingenuity for life



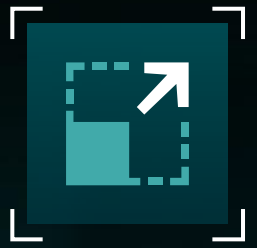
Retrofit and Modernization Services

Extending the lifetime of installed production assets by using e.g. energy-saving parts and integrating them intelligently into an automation environment. This saves costs and results in higher availability.

- Minimized unplanned downtime with upgrades to the latest technology standards
- Reduced costs by using more efficient components
- Enhanced analytical possibilities thanks to a step-by-step digitalization approach

Extend the lifetime of production assets with Retrofit and Modernization Services

SIEMENS
Ingenuity for life

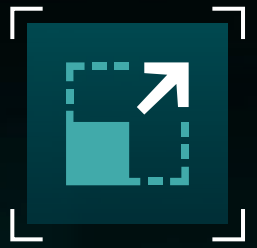


Retrofit and Modernization Services

- Retrofit for Drive Systems
- Retrofit for Machine Tools
- Retrofit for Production Machines
- Migration for Automation Systems
- Modernization for Process Control Systems

Extend the lifetime of production assets with Retrofit and Modernization Services

SIEMENS
Ingenuity for life



Retrofit and Modernization Services

- Retrofit for Drive Systems
- Retrofit for Machine Tools
- Retrofit for Production Machines
- Migration for Automation Systems
- Modernization for Process Control Systems

Extended lifetime with Retrofit for SIMOTICS Motors

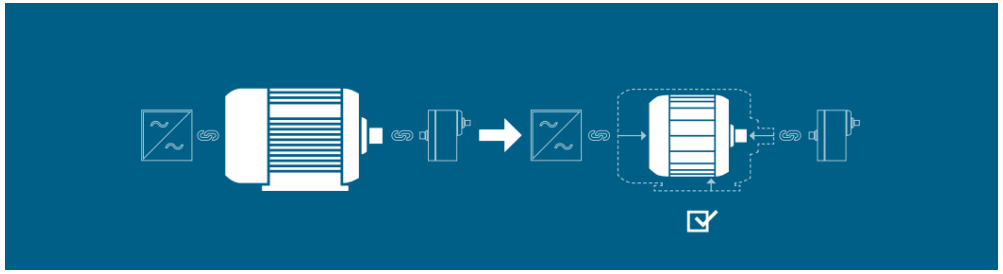
SIEMENS
Ingenuity for life

Retrofit for SIMOTICS Motors

The modernization of electric motors – also called retrofit – forms an essential part in their product lifecycle. Siemens offers a comprehensive retrofit program for Siemens and non-Siemens products.

How does it work?

- In many cases, the component to be exchanged can be replaced with a standard product from Siemens' extensive motors product range
- If additional customization is needed, it can be done either right in the factory or on-site when the new component is installed, depending on the scope of the necessary work



Main value drivers

- Increased availability with an upgrade to state-of-the-art technology
- Less maintenance effort and costs for advanced product lifecycle
- Increased sustainability by keeping existing components

Extended lifetime with Retrofit for DYNAVERT I

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Retrofit for DYNAVERT I

As a result of the age of the DYNAVERT I converters, the supply of spare parts is already restricted. If a failure occurs, it is possible that plant downtimes will not be able to be immediately resolved. That's why Siemens recommends to replace the older DYNAVERT I model series I00-I02 by products from the newer DYNAVERT I series.

How does it work?

- Siemens offers an extensive retrofit portfolio and through a retrofit for DYNAVERT I, in most cases, the existing motors (including the cabling) can still be used
- Alternatively, converters from the older DYNAVERT I model series can also be replaced by voltage-source DC link converters, such as the SINAMICS G180/G150
- Retrofit specialists can support the customer with special solutions if necessary

Main value drivers

Increased availability with an upgrade to state-of-the-art technology

Less maintenance effort and costs for advanced product lifecycle

Increased sustainability by keeping existing components

Extended lifetime with Retrofit for SIMOVERT A

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Ingenuity for life

Retrofit for SIMOVERT A

As a result of the age of the SIMOVERT A converters, the supply of spare parts is already restricted. If a failure occurs, it is possible that plant downtimes will not be able to be immediately resolved. That's why Siemens recommends to replace the SIMOVERT A with the newer DYNAVERT I series or alternatively with a SINAMICS converter on special conditions.

How does it work?

- The SIMOVERT A series of devices are most easily replaced like-for-like with products from the DYNAVERT I series
- DYNAVERT I products are similar to the existing SIMOVERT A DC link current converters and thus have the same operating principle
- The motor – frequently improved for the operation on a DC link current converter – can be retained, just as can the existing (mostly unshielded) cabling, if required

Main value drivers

Increased availability with an upgrade to state-of-the-art technology

Less maintenance effort and costs for advanced product lifecycle

Increased sustainability by keeping existing components

Extended lifetime with Retrofit for SIMOREG DC

SIEMENS
Ingenuity for life

Retrofit for SIMOREG DC

As a result of the age of the SIMOREG DC converters, the supply of spare parts is already restricted. If a failure occurs, it is possible that plant downtimes will not be able to be immediately resolved. That's why Siemens recommends to replace the SIMOREG DC with the current products from the SINAMICS low-voltage series.

How does it work?

- Older Siemens products, such as SIMOREG K, SIMOREG DC-Master and drives with SITOR technology, can be replaced with the new SINAMICS product series
- SINAMICS DCM devices can also be used to replace many competition products of the same product category

Main value drivers

- Increased availability with an upgrade to state-of-the-art technology
- Less maintenance effort and costs for advanced product lifecycle
- Increased sustainability by keeping existing components

Extended lifetime with Retrofit for SIMOVERT P/V

Retrofit for SIMOVERT P/V

As a result of the age of the SIMOVERT P/V converters, the supply of spare parts is already restricted. If a failure occurs, it is possible that plant downtimes will not be able to be immediately resolved. That's why Siemens recommends to replace the SIMOVERT P/V with the current products from the SINAMICS low-voltage series.

How does it work?

- SIMOVERT P3 and SIMOVERT P4 devices can be replaced by current products from the SINAMICS low voltage series
- Entire plants that have been equipped with SIMOVERT standard devices can be replaced by SINAMICS S120 applications
- Old devices from the SIMOVERT P/V 3rd and 4th generation as well as new SINAMICS devices are designed as intermediate voltage circuit converter. That's why motors can therefore always still be operated on the new devices

Main value drivers

- Increased availability with an upgrade to state-of-the-art technology
- Less maintenance effort and costs for advanced product lifecycle
- Increased sustainability by keeping existing components

Extended lifetime of customer machines with Retrofit for SIMOVERT MASTERDRIVES

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Ingenuity for life

Retrofit for SIMOVERT MASTERDRIVES

Drive System Retrofit for SIMOVERT MASTERDRIVES offers the opportunity to optimize drives for a higher security of investment and increased reliability

- SIMOVERT MASTERDRIVES product discontinuation from October 1, 2020
- Siemens unparalleled MASTERDRIVES knowledge best placed to recommend the ideal SINAMICS replacement
- Optimized retrofit process by Siemens reduce machine downtime during transition

How does it work?

Since each retrofit project is as individual as its application, our retrofit experts will support you in developing the right retrofit solution adapted to your needs.

Main value drivers

- Create sustainability
- Ensured availability
- Improve productivity
- Optimize asset management
- Reduce costs

Extended lifetime with Retrofit for SINAMICS G130/G150/S120/S150

SIEMENS
Ingenuity for life

Retrofit for SINAMICS G130/G150/S120/S150

Siemens extensive portfolio of SINAMICS low-voltage drive systems is the most complete and thoroughly integrated family of drives in the world. With a high level of flexibility, functionality and engineering comfort, our systems cover all performance levels – from simple frequency converter tasks and coordinated drives through to motion control tasks.

To always ensure state-of-the-art technology, the existing SINAMICS family is continuously refined and upgrades are made available.

How does it work?

In the last years the SINAMICS family has been further developed and various upgrades can be performed

- Upgrade to state-of-the-art electronic modules
- Upgrade for operation with SIMOTICS FD motors
- Upgrade to water/hybrid cooling

Main value drivers

- Create sustainability
- Ensured availability
- Improve productivity
- Optimize asset management
- Reduce costs

Extended lifetime of customer machine with Retrofit for MICROMASTER

SIEMENS
Ingenuity for life

Retrofit for MICROMASTER

Drive System Retrofit for MICROMASTER offers the opportunity to optimize drives for a higher security of investment and increased reliability

- MICROMASTER product type cancellation since October 1,2019
- Siemens unparalleled MICROMASTER knowledge best placed to recommend the ideal SINAMICS replacement
- Optimized retrofit process by Siemens reduce machine downtime during transition

How does it work?

Since each retrofit project is as individual as its application, our retrofit experts will support you in developing the right retrofit solution adapted to your needs.

Main value drivers

- Create sustainability
- Ensured availability
- Improve productivity
- Optimize asset management
- Reduce costs

Extend the lifetime of production assets with Retrofit and Modernization Services

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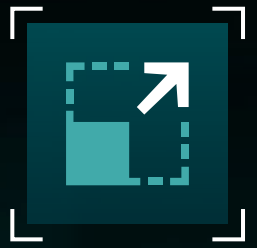
Ingenuity for life



Retrofit and Modernization Services

- Retrofit for Drive Systems
- Retrofit for Machine Tools
- Retrofit for Production Machines
- Migration for Automation Systems
- Modernization for Process Control Systems

The economical solution ensuring IT-security and spare parts availability with PCU Retrofit for SINUMERIK 840D

SIEMENS
Ingenuity for life

PCU Retrofit for SINUMERIK 840D

With a PCU Retrofit for SINUMERIK, machine tools equipped with SINUMERIK 840D pl and sl are modernized: The hardware and software components MMC103, PCU50 and HMI Advanced with the out-of-date Windows 95, NT, XP operating systems are replaced by an IPC 427D with Windows 10 operating system and HMI Advanced/HMI Pro for Retrofit.

PCU Retrofit will ensure spare part availability by using new, state-of-the-art, industrial PC. Additional it will improve the IT-security thanks to the new Windows 10 operating system.

How does it work?

1 Evaluation
Machine analysis. Recording and evaluation of machine-specific conditions.

2 Preparation
Retention and implementation of machine-specific data and applications. Preparation and testing in the laboratory.

3 Implementation
Commissioning at your plant. Consulting on IT security requirements and optional implementation.

Main value drivers

- Improved IT-security
- Ensured availability
- Created sustainability
- Optimized asset management

Extended machine lifetime and performance at reasonable costs with Retrofit for Machine Tools

SIEMENS
Ingenuity for life

Retrofit for Machine Tools

Retrofit for Machine Tools offers a machine modernization to significantly reduce cycle times and improve quality due to update specific individual components to the state of the art, i.e. new control and drive technology SINUMERIK and SINAMICS. As part of the retrofit the machines are ready for the next steps into the digital future.

How does it work?

- Competent consulting services with machine assessment and determination of retrofit scope
- Project lead by specialized managers
- Renewal of the mechanical system together with competent partners
- Preparation of retrofit
- Short retrofitting period at customer-site
- Training of all relevant stakeholders

Main value drivers

- Ensured availability
- Reduce costs
- Increased productivity
- Optimize asset management
- Enhanced sustainability

Extend the lifetime of production assets with Retrofit and Modernization Services

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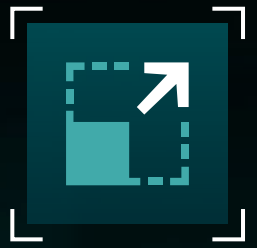

Retrofit and Modernization Services

Retrofit for Drive Systems

Retrofit for Machine Tools

Retrofit for Production Machines

Migration for Automation Systems

Modernization for Process Control Systems

Enhanced availability with Retrofit for Production Machine

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Retrofit for Production Machine

As production machinery ages, the question always arises whether to purchase new equipment or retrofit the old machinery. Retrofitting makes sense if

- There is a high proportion of steel components in the machine's mechanics
- The machine automation is becoming obsolete and prone to failure

How does it work?

- Comprehensive consulting and reliable timely implementation
- Tailored modernization concept with the newest technology including dimensioning and selection of the right drives and motors
- Implementation of standard proven applications
- Considering all safety requirements for human and machines
- Pre-tested retrofit solution helps to reduce time

Main value drivers

- Enhanced availability
- Reduced costs
- Optimized asset management

Extend the lifetime of production assets with Retrofit and Modernization Services

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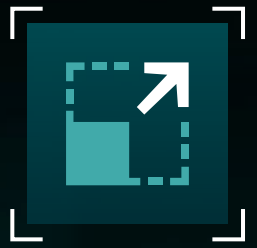


Retrofit and Modernization Services

Retrofit for Drive Systems

Retrofit for Machine Tools

Retrofit for Production Machines

Migration for Automation Systems

Modernization for Process Control Systems

Minimum risk through clear structured migration process with Migration Consulting and Support

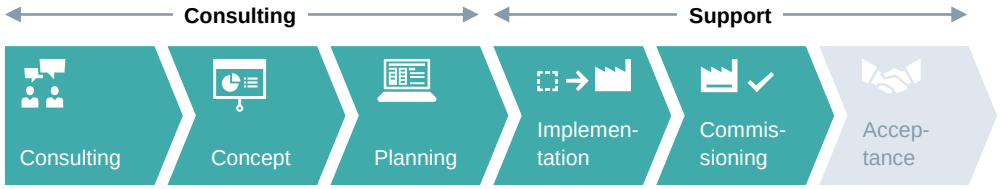
SIEMENS
Ingenuity for life

Migration Consulting and Support

Migration Consulting and Support provides an individual consulting and support for successful migration of legacy SIMATIC product and systems. The support is limited to 8 hours. It's focused on the first 5 phases of migration process.

How does it work?

- In-depth support during the implementation and commissioning phases
- Dedicated migration expert for all phases along the migration path
- Support can be ordered for any phase at any time



Main value drivers

Minimized risk as a result of a clearly migration process

Minimal risk by utilizing product specialists for testing of the application

Reduced costs due to a tailored concept

Cost optimized transformation the application software to the target platform with Application Software Migration

SIEMENS
Ingenuity for life

Application Software Migration

The Application Software Migration is a SIMATIC application for migration to a planed target platform (such as TIA Portal) without expanding system functions. It's ideal for phase 4 of migration process.

How does it work?

- The old application will be migrated to a new platform such as TIA Portal
- A report will be generated about all anomalies during the compiling of programs
- The old software application will be needed

Main value drivers

Cost-efficient alternative for outsourcing of engineering activities

Minimal risk by utilizing product specialists for testing of the application

Solution in case of resource shortage or missing expert product knowledge

Early identification of obsolete components with Product Upgrade Service

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Ingenuity for life

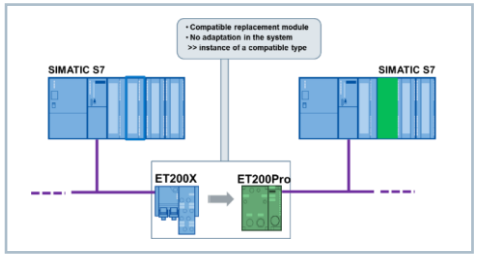
Product Upgrade Service

The Product Upgrade Service offers a preventive approach to maximize the lifespan of automation systems by early identification and modernization of obsolete components through newer, more innovative products or product families.

How does it work?

- Analysis of customer system
- Based on the compatibility between the obsolete and the new components
  - **Simple upgrade:** Only hardware exchange
  - **Comprehensive upgrade:** Requires prior analysis of technical aspects and consulting by modernization experts

Upgrade example



Main value drivers

Increased trans-parency of your system's condition

Reduction of system-related downtime costs

Timely detection of failure risks and prevention of failures

Shorter migration time due to efficient and standardized migration process with Complete System Modernization

SIEMENS
Ingenuity for life

Complete System Modernization

Complete modernization of legacy SIMATIC system including test and acceptance as a turnkey solution. Examples: SIMATIC HMI including WinCC to TIA, PROFIBUS to PROFINET.

How does it work?

- All migrate-able SIMATIC products and compatible components from third-party companies can be migrated to the newest SIMATIC family
- Decision for partial or complete migration based on determination of project scope
- Regular information exchange with customers during the migration process

Main value drivers

Successful migration by a competent and experienced partner

Smooth transition to the new system

Minimum risks thanks to support directly by manufacturer

Minimized risk as a result of a structured conversion process with Platform Conversion Support

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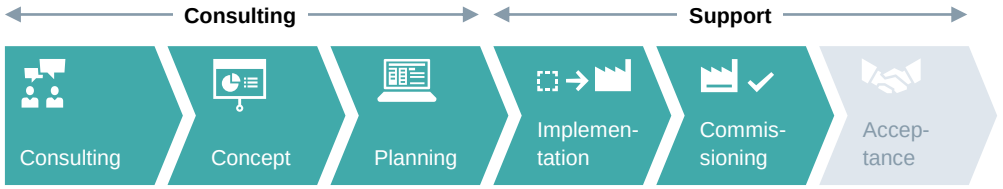
Ingenuity for life

Platform Conversion Support

Platform Conversion Support provides individual support to convert third-party automation to the newest SIMATIC system. It's focused on the first 5 phases of migration process.

How does it work?

- Support to analyze legacy third-party system and work out the suitable SIMATIC automation system concept
- In-depth support during implementation and commissioning phase by dedicated migration experts
- Flexible starting point at any phase of migration process and frequent information exchange



Main value drivers

- Minimal risk due to clear structured converting process
- Expert know-how for sustainable migration solutions
- Optimized costs by selecting the most feasible migration concept

Extend the lifetime of production assets with Retrofit and Modernization Services

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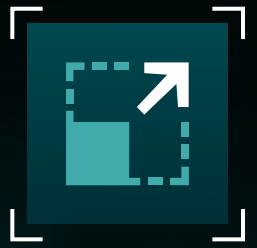


Retrofit and Modernization Services

- Retrofit for Drive Systems
- Retrofit for Machine Tools
- Retrofit for Production Machines
- Migration for Automation Systems
- **Modernization for Process Control Systems**

Data archiving, visualization and back-up with SIMATIC DCS/SCADA Infrastructure

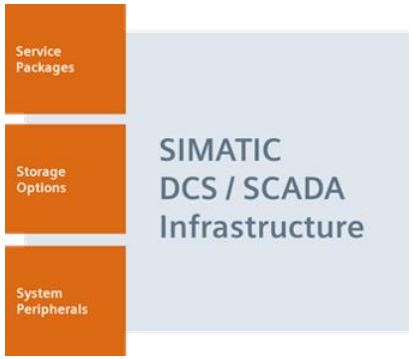
SIEMENS
Ingenuity for life

SIMATIC DCS/SCADA Infrastructure

SIMATIC DCS/SCADA Infrastructure provides a powerful and pre-configured IT infrastructure with pre-installed software. A prefabricated complete system ensures that the engineering and commissioning phase can be carried out as efficiently as possible.

How does it work?

- **Module − Service Packages:** 5-year service agreement
- **Module − Storage Options:** Data archiving and visualization with the Process Historian/ Information Server software, additionally a disaster recovery back-up solution
- **Module − System Peripherals:** Operation and monitoring of the running production via the PCS 7 Operator Station



Main value drivers

- Ready-to-run system components
- Optimal usage of installed hardware resources
- Integrated solution consisting of hardware, software and services

Future-proof modernization of process control systems with SIMATIC Virtualization as a Service

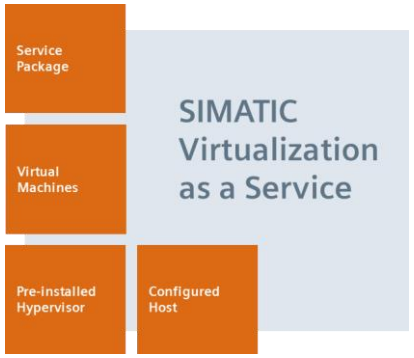
SIEMENS
Ingenuity for life

SIMATIC Virtualization as a Service

The customers receive the lifecycle service required for a virtualization solution, including the suitable software and hardware components. Various hardware platforms allow to scale the virtualization system to actual requirements.

How does it work?

- **Module − Configured Host:** Consists of the server hardware and a management console
- **Module − Pre-installed Hypervisor:** Installation of the virtualization layer
- **Module − Virtual Machines:** Delivery of a virtual machine ready for operation
- **Modul − Service Package:** Includes pre-installation and configuration of the server, Technical Support, system documentation and After-Sales-Service



Main value drivers

Up to 75% energy savings

Up to 80% less space required

100% lifecycle services from a single source

Modernize existing DCS libraries with DCS Application Services

SIEMENS
Ingenuity for life

DCS Application Services

DCS Application Services cover the entire service around the modernization of your DCS libraries to PCS 7 Advanced Process Library (APL). The core of the portfolio element is the standardized procedure for library exchange based on DCS engineering data.

How does it work?

- AS/OS analysis creates transparency
- Standardized library exchange packages for AS and OS at a fixed price
- Customer-specific additional services for further libraries and project-standardization

Main value drivers

Enables participation in current and future DCS innovations

Reduces maintenance and care costs

Efficient solutions – Even for complex tasks

Improve business outcome with Service Contracts

SIEMENS
Ingenuity for life

Service Contracts

Combining managed services to an individual configurable service package for a defined product, system or the whole industrial facility. They can range from priority treatment in case of an emergency to handling the complete maintenance activities for a whole plant.

- Minimized unplanned downtime thanks to priority treatment in case of an emergency
- Focusing on core business thanks to service experts who handle your service activities
- Reduced costs thanks to optimized and tailored service measures

Improve business outcome with Service Contracts

SIEMENS
Ingenuity for life

Service Contracts

- Service Contracts for Drive Systems
- Service Contracts for Machine Tools
- Service Contracts for Automation Systems
- Service Contracts for Process Control Systems
- Service Contracts for Plants

Improve business outcome with Service Contracts

SIEMENS
Ingenuity for life

Service Contracts

Service Contracts for Drive Systems

Service Contracts for Machine Tools

Service Contracts for Automation Systems

Service Contracts for Process Control Systems

Service Contracts for Plants

Enhanced availability with Drive Service Agreements

SIEMENS
Ingenuity for life

Drive Service Agreements

Drive Service Agreements offer the opportunity to easily purchase a bundle of service elements that are already available in existing service portfolios. The customer can benefit from a choice of agreements covering different levels of; Service Support Cards, Web-Based Training, and Life Cycle information Service for your drive systems SINAMICS V20, SINAMICS G120 PM240-2, SINAMICS G120C and MICROMASTER (MM4).

How does it work?

Drive Service Agreement
Fundamental

- Service Card Priority
- Service Card Premium
- Web-based trainings

Drive Service Agreement
Extended

- Service Card Priority
- Service Card Premium
- Web-based training
- **Erweiterter/Premium Hotline Support – 5 cases**
- **Lifecycle Information Service**

Main value drivers

- Enhanced availability
- Reduced costs
- Created sustainability

Enhanced availability with Manhours Package

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Ingenuity for life

Manhours Package

Customer-specific local service contracts ensure that the customer receives a service package tailored to suit his needs. It could include fault diagnostics, repair, maintenance, consultancy, out of hours cover – In short, whatever support the customer needs for his equipment is offered by a suitably qualified engineer.

How does it work?

- Manhours Package an addition to the local service contract for drive systems and tailored to your specific requirements. Including for example fault diagnostics, repair, maintenance, consultancy and out of hours cover
- A package of 5 manhours that can be ordered for a variety of on and off-site services is also available
- A package of 10 manhours that can be ordered for a variety of on and off-site services is also available

Main value drivers

- Enhanced availability
- Reduced costs
- Created sustainability

Drive Train Management Contract – Comprehensive preventive maintenance and operating solutions

SIEMENS
Ingenuity for life

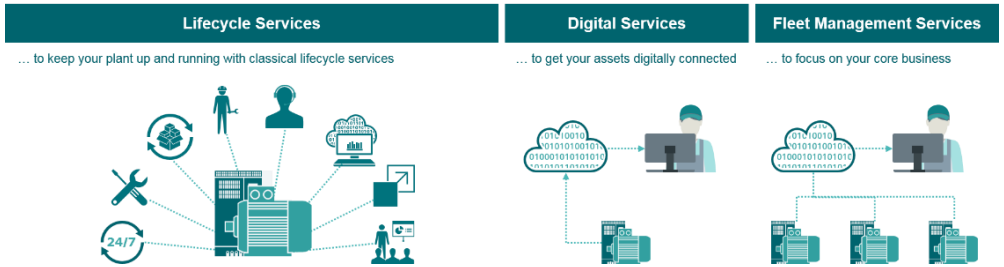
Drive Train Management Contract

The Drive Train Management Contract offers a comprehensive package of a lifecycle services, digital services and fleet management services.

How does it work?

With this tailored service program motors and converters can attain the level of technical reliability and performance they need to meet the production requirements of today's plants:

- Lifecycle Services
- Digital Services
- Fleet Management Services



Main value drivers

- Create sustainability
- Ensure availability
- Improve productivity
- Optimize asset management
- Reduce costs

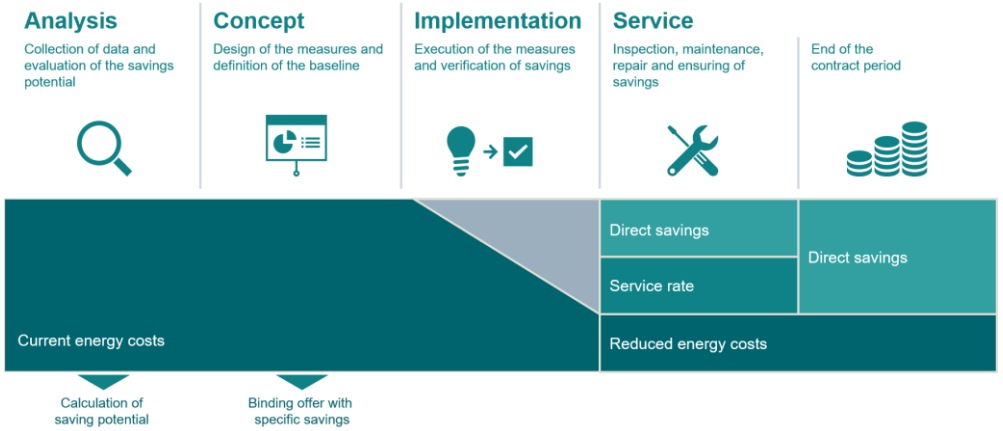
Optimization of drive applications covered by savings with Energy Performance Contracting

SIEMENS
Ingenuity for life

Energy Performance Contracting

Energy Performance Contracting for drive applications pays for optimization measures through savings in energy costs. The projects are implemented according to a four-step process with low risk for our customers thanks to the promised savings.

How does it work?



Main value drivers

- Improving the energy efficiency of their plants
- Lowering energy costs and avoiding high investments

Improve business outcome with Service Contracts

SIEMENS
Ingenuity for life

Service Contracts

Service Contracts for Drive Systems

Service Contracts for Machine Tools

Service Contracts for Automation Systems

Service Contracts for Process Control Systems

Service Contracts for Plants

Enhanced availability with Local Service Contract

SIEMENS
Ingenuity for life

Local Service Contract

With the Local Service Contract, Siemens offers a modular provision program for machine operators that ensures the availability of machine tools and production systems and which contributes decisively to more efficient production. The extent of the contract is adapted individually to the service concept. Siemens offers the contract services also outside usual office hours.

How does it work?

- Modular service packages
- Tailored to customer needs for a lump sum
- Contractual Service out of office hours
- Reduced risks due to preventive maintenance
- Enhanced reaction time and service time frames
- Repair/exchange of defect components
- Optimized spare part strategy with lifecycle check

Main value drivers

- Enhanced availability
- Reduced costs
- Created sustainability

Enhanced availability with Repair Service Contracts

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Ingenuity for life

Repair Service Contracts (RSC)

Repair Service Contract combines all repair services for the SINUMERIK 840D sl system within the warranty period and offers machine manufacturers and dealers to cover the repair costs by a flat rate price and therefore minimize the cost risk. With the Repair Service Contract 2.0, you can flexibly book services using three additional options, to fulfill your individual whishes and requirements.

Option 1 Flexible RSC start	**Option 2** Earlier start of the service period	**Option 3** Multiple contract extensions

How does it work?

The basic agreement ensures the subsequent rectifications of defects at the location where the machines are installed.

On-site repair – at a flat rate – consists of

- Provision of service staff and spare parts
- On-site diagnosis
- On-site fault clearance and its evidence

Main value drivers

- Enhanced availability due to quick diagnostics and trouble-shooting
- Predictable service cost also for un-expected repairs

Protection of cost risk with On-site Service Extension

SIEMENS
Ingenuity for life

On-site Service Extension

For SINUMERIK 828D, as well as for SINUMERIK 808D and the associated drive, motor and accessory components from Siemens, an on-site service of 24 months is automatically included that is activated with the notification of second commissioning at the end user.

On-site service offers the subsequent fulfilment of product defect rectification at the place of installation of the machine.

How does it work?

- Provision of service personnel
- On-Site diagnostics
- On-Site trouble-shooting
- Proof of the fault rectification

Main value drivers

Planning certainty and calculable costs

Enhanced machine availability thanks to a fast response

Improve business outcome with Service Contracts

SIEMENS
Ingenuity for life

Service Contracts

Service Contracts for Drive Systems

Service Contracts for Machine Tools

Service Contracts for Automation Systems

Service Contracts for Process Control Systems

Service Contracts for Plants

Enhanced availability with OEM Repair Service Contracts

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Ingenuity for life

OEM Repair Service Contracts

Services Contracts are individually configurable, customized service packages for defined system or product groups from automation and drive technology. They make the preventive maintenance, optimization, and modernization more efficient and powerful while reducing costs.

How does it work?

The individual services along the lifecycle are seamlessly coordinated with each other and support the optimal use of machines and plants. The services of a service contract can be flexibly adjusted at any time and can be used independently from each other. Flexible options, such as extended service periods, defined arrival times, special maintenance intervals, and remote maintenance can be tailored to meet the customer's needs.

Main value drivers

- Assured plant availability
- Transparent costs and improved operating conditions
- Extended lifecycle of the plant

Improve business outcome with Service Contracts

SIEMENS
Ingenuity for life

Service Contracts

Service Contracts for Drive Systems

Service Contracts for Machine Tools

Service Contracts for Automation Systems

Service Contracts for Process Control Systems

Service Contracts for Plants

Long-term investment protection with SIMATIC PCS 7 Lifecycle Service Contracts

SIEMENS
Ingenuity for life

SIMATIC PCS 7 Lifecycle Service Contracts

SIMATIC PCS 7 Lifecycle Services provides a powerful service program for all aspects of the SIMATIC PCS 7 control system for you. Individual, flexible service contracts emerge from this, optimally tailored to your requirements in the lifecycle of your plant.

How does it work?

Main value drivers

- Long-term investment protection
- Know-how of the manufacturer of automation system
- Project management from one source for the entire contact period

Improve business outcome with Service Contracts

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Ingenuity for life

Service Contracts

Service Contracts for Drive Systems

Service Contracts for Machine Tools

Service Contracts for Automation Systems

Service Contracts for Process Control Systems

Service Contracts for Plants

Higher plant availability and reduced maintenance costs with Integral Plant Maintenance (IPM)

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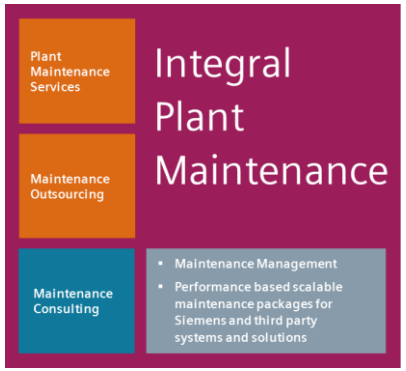
Integral Plant Maintenance (IPM)

Integral Plant Maintenance (IPM) helps to minimize unscheduled plant and machinery downtimes, increases plant availability, improves product quality, and ensures that investments in plant and machinery hold their value.

How does it work?

Plant-specific asset management services help to avoid unscheduled downtime. These include, for example, servicing and maintenance contracts to support the maintenance of the operations, maintenance management, and assuming responsibility for – as well as carrying out – on-site maintenance.

- **Maintenance Consulting**
- **Maintenance Outsourcing**
- **Plant Maintenance Services**



Main value drivers

- Maximal plant availability through maintenance at the highest technical level
- Maintenance cost transparency and predictable budgets
- Assurance and long-term partnership throughout the entire plant lifecycle

Improve lifecycle performance with Service Programs and Platforms

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Service Programs and Platforms

Combining compatible services for a specific product, system or solution. These services are perfectly matched and complement each other to extend the lifecycle of the used components or the entire system.

- Extended lifecycle with perfectly matched services to a specific product, system or solutions
- Our service experts' long-term expertise form the basis for each service program
- Step-by-step implementation of the services results in implementation flexibility

Improve lifecycle performance with Service Programs and Platforms

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Ingenuity for life

Service Programs and Platforms

- Service Programs for Drive Systems
- Service Programs for Motion Control
- Service Programs for Process Control Systems
- Service Programs for Process Instrumentation
- Service Platforms

Improve lifecycle performance with Service Programs and Platforms

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Ingenuity for life

Service Programs and Platforms

Service Programs for Drive Systems

Service Programs for Motion Control

Service Programs for Process Control Systems

Service Programs for Process Instrumentation

Service Platforms

Increased productivity of drives with Digital Drive System Services

Digital Drive System Services

With our service portfolio for the entire drive system – comprised of SINAMICS converters and SIMOTICS motors – we'll assist you by providing experience and expertise in every industry. We're right where you need us throughout your drive systems' entire lifecycle. And with new digitalized services, we support the digital transformation.

We at Siemens help you with our Digital Drive System Services on your way to your digital transformation.

How does it work?

- In the first step, our digitalization experts perform a Digitalization Check to determine how your motors and converters can be connected to MindSphere.
- In the second step, we connect the drive systems with MindSphere via connection modules.
- Based on the data transparency we achieve, we provide you with the assistance you need to make your drives more reliable, available, and efficient for the long term.

Main value drivers

- Enhanced availability of drive systems
- Increased productivity
- Preventive maintenance and efficient spare parts management

Improve lifecycle performance with Service Programs and Platforms

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Ingenuity for life

Service Programs and Platforms

Service Programs for Drive Systems

Service Programs for Motion Control

Service Programs for Process Control Systems

Service Programs for Process Instrumentation

Service Platforms

Transparency on production performance with Digital Motion Control Services

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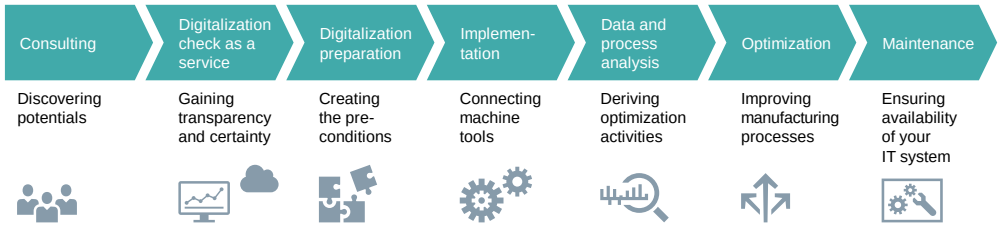
Digital Motion Control Services

Digital Enterprise Consulting is a holistic end-to-end approach for your digital transformation, in which your Siemens experts develop a digitalization roadmap tailored to your specific needs and business drivers.

How does it work?

The Services help machine operators identify untapped potentials for optimization and improve production with integrated IT processes. Siemens experts are there to provide advice and guidance: for demand analyses and the resulting concepts for solution architecture and specifications and actual implementation.



Main value drivers

- Ensured availability
- Reduce costs
- Increased productivity
- Optimize asset management
- Enhanced sustainability

Improve lifecycle performance with Service Programs and Platforms

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Ingenuity for life

Service Programs and Platforms

Service Programs for Drive Systems

Service Programs for Motion Control

Service Programs for Process Control Systems

Service Programs for Process Instrumentation

Service Platforms

Accurate assessment of the actual plant situation with Installed Base Capture and Analytics Services

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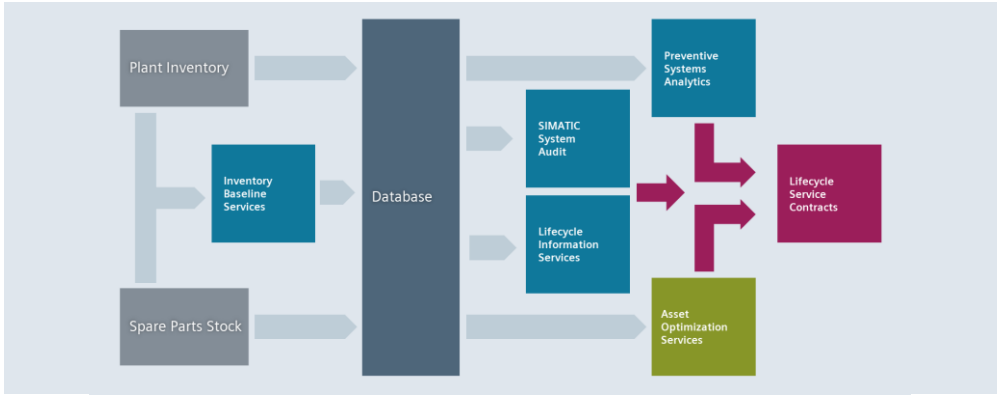
Installed Base Capture and Analytics Services

The “Installed Base Capture and Analytics Services” service program is used to analyze and evaluate the utilized automation and process instrumentation components and the system configuration. It combines several innovative, data-based service elements, which enable efficient data collection, comprehensive analysis as well as accurate assessment of the actual situation.

How does it work?



Main value drivers

- Preventive maintenance and efficient spare parts management
- Early identification of the need for action
- Reduced risks and therefore improved service capability

Reduced lifecycle costs with Remote System as Managed Appliance

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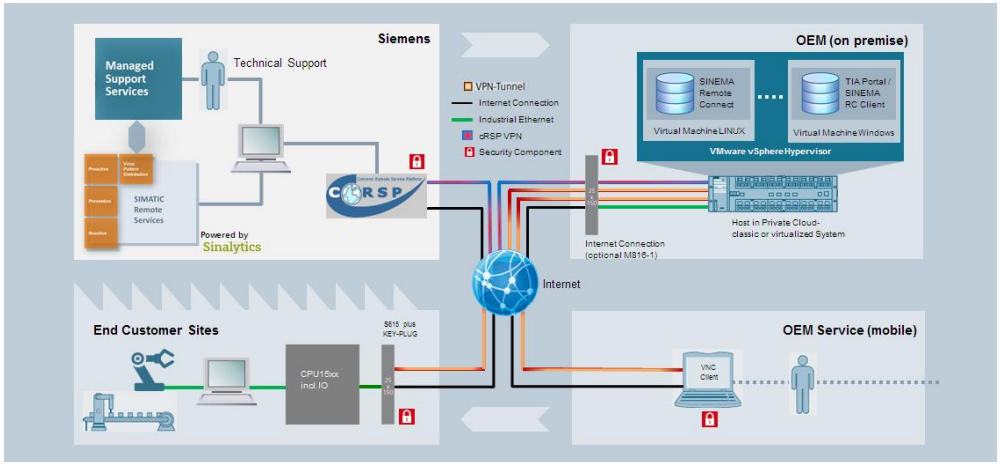
Remote System as Managed Appliance

In addition to servicing of the hardware platform, the crucial factor in reduction of lifecycle costs is the preventive maintenance of the installed software components.
The service program “Managed Appliances” meets these demands, in particular by offering services, delivery as well as the complete IT infrastructure and fast technical support all from a single source.

How does it work?



Main value drivers

- Solution from a single source with coordinated hard- and software components
- Reduction of lifecycle costs
- Simple and efficient maintenance of the system components used

Hyper-convergent IT infrastructure for your Digital Enterprise with Industrial Automation DataCenter

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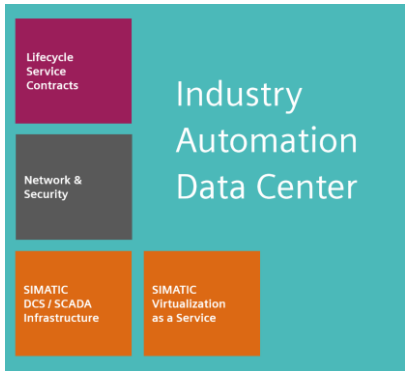
Industrial Automation DataCenter

An individually configured data center for on-site use in production. It is designed for the special applicative requirements in the production area. The system includes all important core components of a data center, such as high-performance computing, redundant network architectures, back-up and disaster recovery systems, process data archiving and IT-security components.

How does it work?

- On the basis of proven virtualization technologies, various applications (e.g. SIMATIC PCS 7, SIMATIC Step7, TIA Portal up to 3rd-party software) can be integrated on a common HW platform
- Different hardware variants enable individual scaling in terms of performance and utilization



Main value drivers

- Pre-configured and ready to use, including the appropriate services
- Consulting, configuration and services – all from one source, directly from the manufacturer
- Higher availability and flexibility of the system

Ensure serviceability and optimized availability with Industry Services for SIMATIC PCS 7

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Industry Services for SIMATIC PCS 7

Availability and serviceability of your control technology are decisive when it comes to making your operating costs predictable and optimize them, protect your investments and ensure plant availability. This is why lifecycle services in modern plants ensure full functionality and scheduled modernization of the control technology over defined periods of time.

How does it work?

A modular Lifecycle Services Contract is made up of defined service elements and contract-specific parameters.

These plant-specific service elements and contract parameters are selected and specified in consultation with the customer, depending on the specific requirements of the plant and the required maintenance.

Main value drivers

- Long-term investment protection
- Modernization and maintenance costs can be predicted at the time of investment (TCO)
- Improved plant availability thanks to assured arrival times for servicing, spare parts supplies and preventive maintenance

Improve lifecycle performance with Service Programs and Platforms

SIEMENS
Ingenuity for life

Service Programs and Platforms

Service Programs for Drive Systems

Service Programs for Motion Control

Service Programs for Process Control Systems

Service Programs for Process Instrumentation

Service Platforms

Get the most out of your field devices with Industry Services for Process Instrumentation

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Industry Services for Process Instrumentation

If you want to remain successful in the process industries, you have to be able to rely on your field devices. These devices play an essential role in keeping costs under control, ensuring safety and security, and delivering top quality – which is exactly what makes our Industry Services for Process Instrumentation so valuable.

How does it work?

The Industry Services for PI cover the entire lifecycle of your field devices.

Main value drivers

- Contractually assured reliability and availability of process instrumentation
- Expertise from the process instrumentation manufacturer
- Predictability of maintenance costs

Improve lifecycle performance with Service Programs and Platforms

SIEMENS
Ingenuity for life

Service Programs and Platforms

Service Programs for Drive Systems

Service Programs for Motion Control

Service Programs for Process Control Systems

Service Programs for Process Instrumentation

Service Platforms

Securing productivity of the machine or plant with Industry Premium Portal

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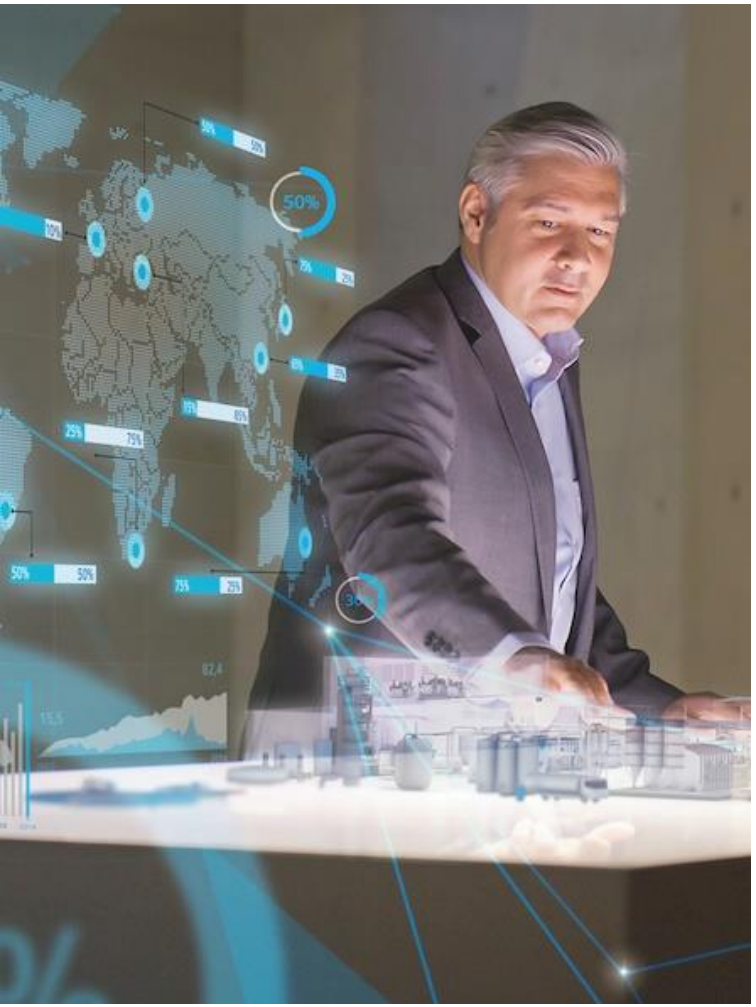
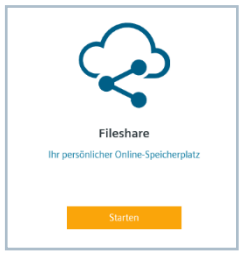


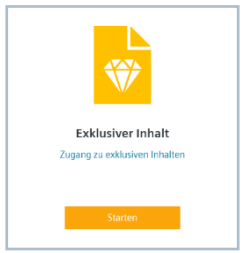
Industry Premium Portal

The Industry Premium Portal lays the foundation for a new and innovative service portal, which provides digital services and exclusive contents for industrial customers.

How does it work?

- Portal access: Available in English and German
- Purchase: Get an e-mail with a user certificate
- Assignment: With the user certificate the membership will be assigned
- Usage: Getting access to Lifecycle Check for devices, Health Check for PCs, Fileshare and exclusive content





Main value drivers

Comfortable diagnosis with a compact overall view of the computer status

Quick and easy check of the product life cycles of your industrial Siemens devices

Access to exclusive contents such as an option packages for STEP 5 (COM packages)

Service is more than you think. Contact us now!

Security information

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 constitute one element of such a concept.

Customers are responsible for preventing unauthorized access to their plants, systems, machines and networks. Such systems, machines and components should only be connected to an enterprise network or the internet if and to the extent such a connection is necessary and only when appropriate security measures (e.g. firewalls and/or network segmentation) are in place.

For additional information on industrial security measures that may be implemented, please visit https://www.siemens.com/industrialsecurity.

Siemens' products and solutions undergo continuous development to make them more secure. Siemens strongly recommends that product updates are applied as soon as they are available and that the latest product versions are used. Use of product versions that are no longer supported, and failure to apply the latest updates may increase customer's exposure to cyber threats.

To stay informed about product updates, subscribe to the Siemens Industrial Security RSS Feed under https://www.siemens.com/industrialsecurity.

Disclaimer

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