SIEMENS
Ingenuity for life

More about training online

SITRAIN: Fit for automation technology

Totally Integrated Automation Training Courses

siemens.com/sitrain

Skills development with perspective by SITRAIN

Opt for practical knowledge coming directly from the manufacturer

Well-trained employees are a crucial factor in any company's success. Skills development and expert knowledge make companies competitive and innovative. With our globally available training courses for industry, we help you achieve these goals – with practical experience, innovative learning methods, and a concept that's tailored to the customer's specific needs.

Wide range of courses available
Our training is conducted by certified experts with extensive hands-on experience. Practical exercises on specially developed training equipment and high quality course documentation ensure successful learning.

Over 300 courses and special advanced training activities for individual industries are offered at more than 170 locations worldwide. Courses can also be customized and held on your own premises.

Long-term competence developed in three phases
The holistic competence development program with SITRAIN ensures that all participants can fill the gaps in their knowledge and increase their capabilities.

Phase 1: Requirement analysis
A requirement analysis establishes clarity in advance. The comprehensive, task-specific assessment of the services to be provided and the participants' current level of knowledge lay the foundation for individual recommendations for further training. Building on this assessment, a course curriculum for building skills is created – adapted to individual customer requirements, of course.

Phase 2: Our trainings
Participation in our training courses forms the core of the skills development program. In the courses we discuss the capabilities and functions of our products, making transparent the workflows and relationships of different product components. The individual training courses are optimally coordinated with each other and purposefully build skills and knowledge for the long term.

Phase 3: Follow-up
At the end of the training course, follow-up measures provide a way to monitor success as well as reinforce and refresh the knowledge acquired. Appropriate courses, e-learning activities, and online support forums keep the knowledge up to date over the long term.

Long-term development of competence with training courses for Siemens Industry customers: Comprehensive qualification solutions to suit all needs

– Analysis of requirements
– Training
– Follow-up

Training for everyone

SITRAIN supports your training requirement throughout the entire lifecycle of your plant. Planners, sales staff and decision-makers find just as many specialized courses on offer as programmers, and commissioning and configuration engineers. Our training also enables the personnel responsible for operating a plant – such as repair, maintenance and service staff – to handle our technology quickly and efficiently.

Excellent quality

The high quality of SITRAIN courses is verified at regular intervals by TNS Infratest, an independent market research institute. We receive a lot of positive feedback from those who have attended our courses, as reflected by the overall satisfaction with our courses expressed in contributions in the Internet.
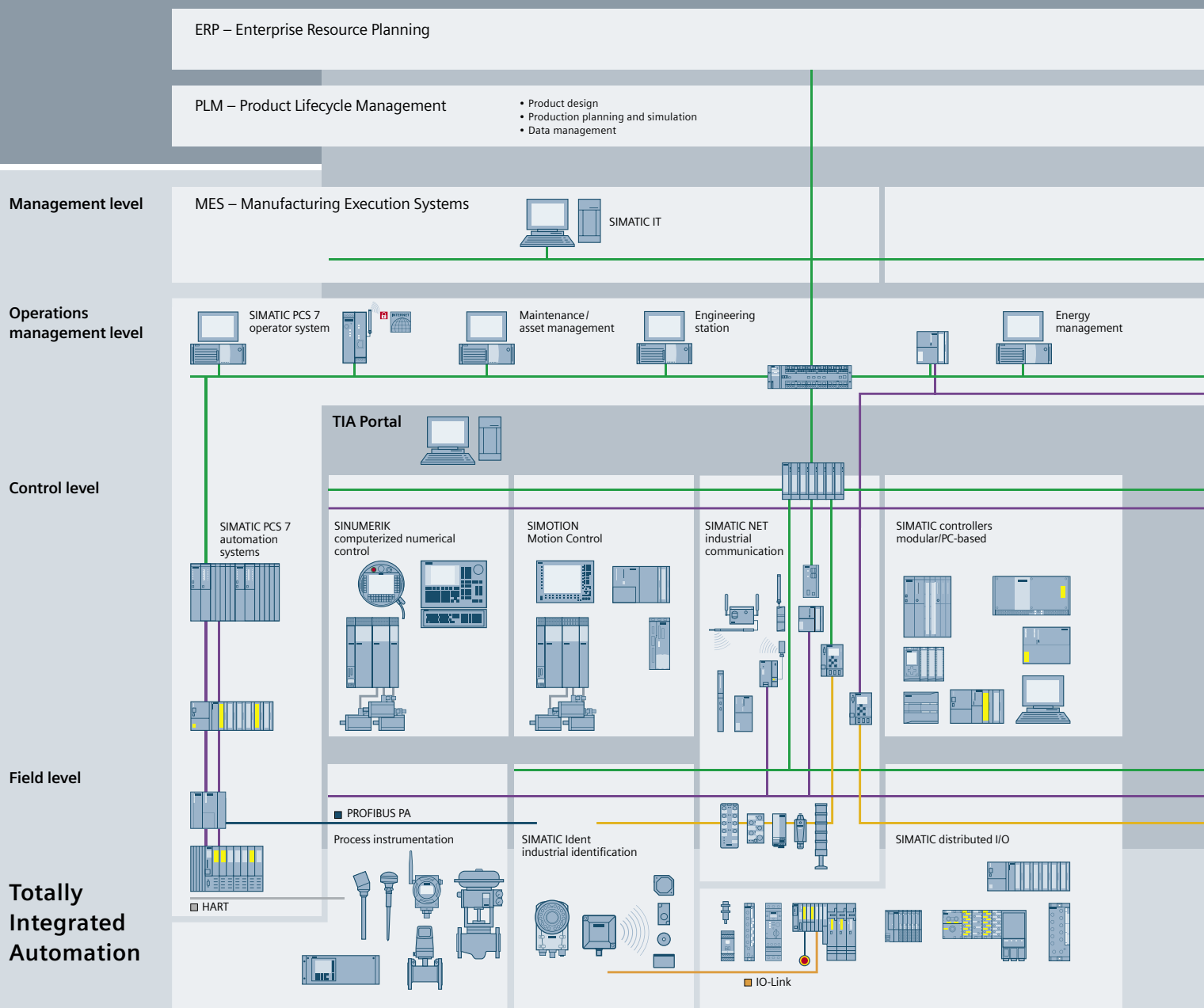
Your SITRAIN benefits – at a glance

• Reduced familiarization times after changes in technology or staff make for resource efficiency
• Training in diagnosis and fault rectification shortens downtimes and improves production processes
• Training certified according to DIN EN ISO 9001 ensures the maintenance of production quality standards

Three good reasons for training with Siemens

+ 1. Innovation
During production, SITRAIN creates the appropriate training courses and sets standards for the future parallel to the development process.

+ 2. Practical relevance
Courses are characterized by a large number of hands-on exercises – usually for half of the course time. This enables the knowledge gained to be immediately applied to everyday work.

+ 3. Holisticity
We support your requirement for training personnel – from the planner to the service technician – throughout the entire lifecycle of your plant.

Efficient automation
begins with efficient engineering

Totally Integrated Automation: Start efficiently. Increase productivity.

ERP – Enterprise Resource Planning

PLM – Product Lifecycle Management
- Product design
- Production planning and simulation
- Data management

Management level

MES – Manufacturing Execution Systems

SIMATIC IT

Operations management level

SIMATIC PCS 7 operator system

Maintenance / asset management

Engineering station

Energy management

TIA Portal

Control level

SIMATIC PCS 7 automation systems

SINUMERIK computerized numerical control

SIMOTION Motion Control

SIMATIC NET industrial communication

SIMATIC controllers modular/PC-based

Field level

PROFIBUS PA

Process instrumentation

SIMATIC Ident industrial identification

SIMATIC distributed I/O

Totally Integrated Automation

HART

IO-Link

4

Efficient engineering is the first step toward better production: Faster, smarter and more flexible. Totally Integrated Automation (TIA) saves an enormous amount of time right from the engineering phase by enabling all automation components to interact efficiently.

The result: Lower costs, faster time-to-market and greater versatility. Benefit from the relevant know-how you gain from professional Siemens training courses.
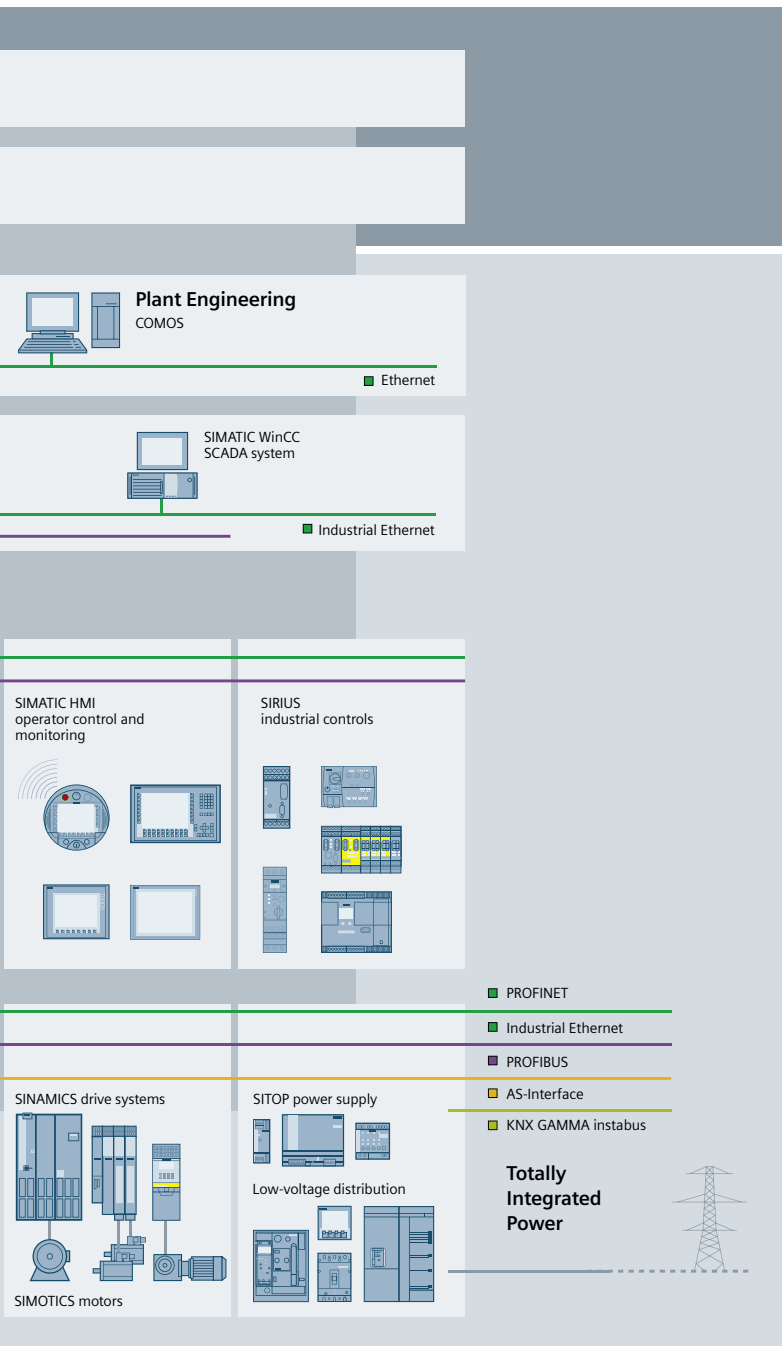
Siemens offers a comprehensive product portfolio for TIA: an overview of all product families, all variants, and all application areas

Plant Engineering
COMOS

■ Ethernet

SIMATIC WinCC
SCADA system

■ Industrial Ethernet

SIMATIC HMI
operator control and
monitoring

SIRIUS
industrial controls

■ PROFINET

■ Industrial Ethernet

■ PROFIBUS

■ AS-Interface

■ KNX GAMMA instabus

SINAMICS drive systems

SITOP power supply

Low-voltage distribution

Totally Integrated Power

SIMOTICS motors

Less expenditure of time, money and work – thanks to consistent, holistic engineering throughout all phases of the production process.

SIMATIC controllers are key elements of TIA and prove themselves in daily use in plant and machine construction, as well as in production and process engineering.

The complete range of engineering and visualization software, together with the high-luminance SIMATIC HMI devices for panel-based visualization ensure efficiency.
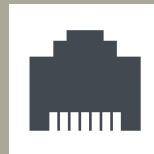
Standardized communication facilitates maximum transparency across all levels – by applying international, cross-manufacturer standards.

Safety is seamlessly integrated in the standard automation to ensure complete, reliable protection of personnel, machinery and the environment.

Controlling actuator parameters – such as position, velocity and speed – is the essential foundation for automation solutions in many industries.

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SITRAIN training for the TIA product portfolio

We offer you product training tailored to match all topic areas so that you can get the most from the capabilities of the extensive SIMATIC range of products. The training covers the entire life cycle of your plant.

SIMATIC S7 service and programming training form the core of SITRAIN product training. The course content covers not only the main topics of SIMATIC S7-1500 in the TIA Portal and SIMATIC S7-300 based on SIMATIC STEP 7 V5.x but also includes programming languages, operator control and monitoring systems, drive technology, industrial communication and safety technology. This ensures that participants are perfectly able to put into operation and efficiently maintain their own plants, optimally exploiting all the potential they offer.

At the end of the course, the SITRAIN Certification Program provides proof of the knowledge you have gained. More detailed know-how is provided in the advanced training courses, and for those already familiar with the conventional SIMATIC world, our migration course simplifies the change to the TIA Portal.

Training based on SIMATIC S7-1500 and the SIMATIC S7-300/-400

Entry level training
Topics: SIMATIC S7-1500 in the TIA Portal, or SIMATIC S7-300 based on SIMATIC STEP 7 V5.x

Goal: To plan, implement and operate solutions safely and efficiently, right from the start
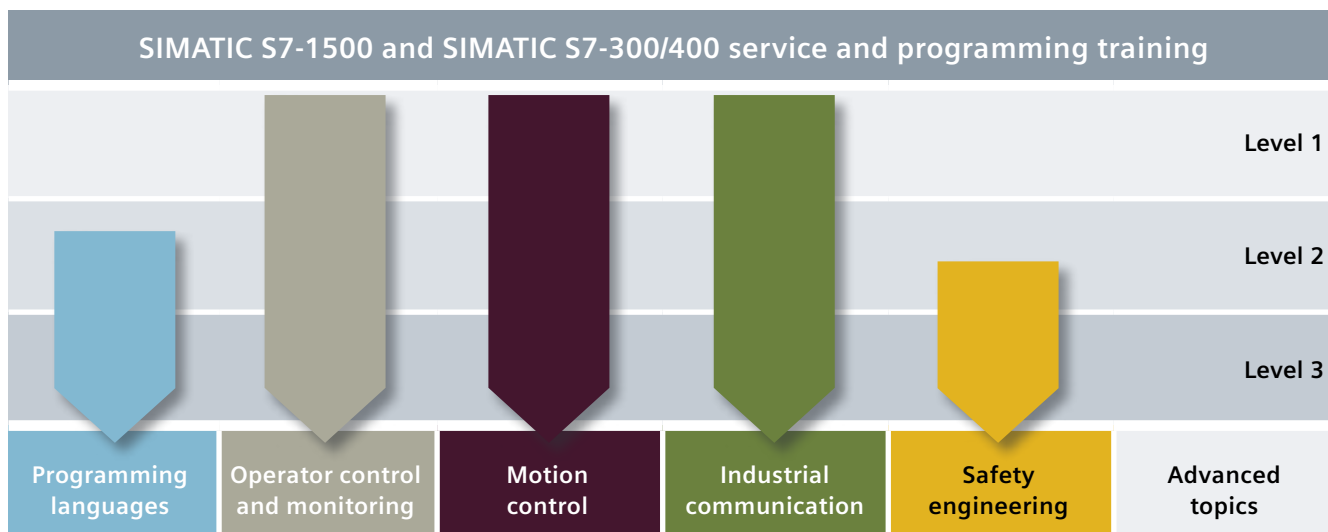
Advanced training
Topics: TIA matters, such as SIMATIC programming languages, operator control and monitoring, motion control, industrial communication and safety engineering

Goal: Implementation of optimal and efficient solutions

Migration training
Topics: Hardware and software functions, migration options based on knowledge of the conventional SIMATIC world

Goal: Quick, efficient migration from the conventional SIMATIC world to SIMATIC S7-1500 in the TIA Portal

SIMATIC S7-1500 and SIMATIC S7-300/400 service and programming training

Level 1 / Level 2 / Level 3

Programming languages | Operator control and monitoring | Motion control | Industrial communication | Safety engineering | Advanced topics

Levels 1–3: Diagram of the 3-stage service and programming training. The programming languages, operator control and monitoring systems, motion control, industrial communication and safety engineering advanced training topics are trained in the depth appropriate for the level.

Qualified training with the SITRAIN Certification Program

Qualification is becoming increasingly important – for employers and employees alike. The SITRAIN Certification Program therefore offers qualified training courses for the entire range of industrial products and solutions from Siemens, with subsequent certification to verify the knowledge gained.

Entry level qualification	Skilled worker in industrial electrical engineering	Technician and master in industrial electrical engineering	Automation programmer	Industrial network administrators
SITRAIN Certification Program: Automation with SIMATIC S7	Siemens Certified Service Technician Level 1		Siemens Certified Programmer	
	Siemens Certified Service Technician Level 2			
Industrial Communication and Networks/Infrastructure	Certified PROFINET Network Installer	Certified PROFINET Network Engineer		Siemens Industrial Networks Education Certification Program

All certification options at a glance
The extensive range of certifications offered includes qualifications in the following fields:

– **Automation technology**

– **Industrial communication**

– **Industrial networks / infrastructure**

You can find additional information on pages 8/9 and 14/15, or go to:
siemens.com/sitrain-certification-industry

SIMATIC training for factory automation with STEP 7 V.5 and SIMATIC S7-300/-400

SIMATIC S7 service and programming training			Programming languages
Service training	**Programming training**		
		Learning path	
SIMATIC S7 service training 1 ST-SERV1	**SIMATIC programming 1** ST-PRO1	**Level 1**	
SIMATIC S7 service training 2 ST-SERV2	**SIMATIC programming 2** ST-PRO2	**Level 2**	
			SIMATIC S7, programming with SCL ST-7SCL
			SIMATIC S7, sequence control with S7-GRAPH ST-7GRAPH
			SIMATIC-S7, graphical programming with CFC ST-7CFC
Siemens Certified Service Technician Level 1 CP-FAST1		**Certification**	
SIMATIC S7 service training 3 ST-SERV3	**SIMATIC S7 programming 3** ST-PRO3	**Level 3**	
Siemens Certified Service Technician Level 2 CP-FAST2	**Siemens Certified Programer** CP-FAP	**Certification**	

Advanced courses

Operator control and monitoring	Motion control	Industrial communication	Safety engineering
			CE Marking & Functional Safety in Machine and System Manufacturing ST-FASAFN
SIMATIC WinCC flexible, system course 1 ST-WCCFSYS1	Technology CPU 315T-2DP, CPU 317T-2DP, CPU 317TF-2DP configuration MC-T-CPU		Programming of safety related SIMATIC S7 controller via Distributed Safety ST-PPDS
SIMATIC WinCC, system course ST-BWINCCS	SIMATIC TDC / Engineering with D7-SYS and CFC SD-TDC		
SIMATIC WinCC flexible, system course 2 ST-WCCFSYS2		Industrial Ethernet system course IK-IESYS	
SIMATIC WinCC, advanced course ST-BWINOND		PROFINET system course IK-PNSYS	
		PROFIBUS system course IK-PBSYS	
		Actuator Sensor-Interface system course IK-ASISYS	
		Understanding the OPC interface-system course IK-OPCSYS	
		Engineering SINAUT ST7 IK-SINAUT	
		Industrial communication – for certification, see page 15	

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SIMATIC training for factory automation with STEP 7 V.5 and SIMATIC S7-300/-400

Course contents at a glance

Technology	Course title	Order code (duration)	Content
SIMATIC S7 Service training	SIMATIC S7 service training 1	ST-SERV1 (5 days)	• Basic knowledge about the SIMATIC S7 automation system structure, configuration, and parameterization • Operation of the SIMATIC STEP 7 software and basic programming • Familiarization with SIMATIC S7 service options
	SIMATIC S7 service training 2	ST-SERV2 (5 days)	• Commissioning the distributed I/O • Integration of drives • Troubleshooting options for clearing faults with the aid of SIMATIC S7 hardware and software
	SIMATIC S7 service training 3	ST-SERV3 (5 days)	• Using STEP 7 system functions • Commissioning of distributed I/O with PROFINET IO • Troubleshooting with the STARTER configuration software for drives and with SIMATIC WinCC flexible visualization software
SIMATIC S7 Programming training	SIMATIC S7 programming 1	ST-PRO1 (5 days)	• Basic knowledge about the SIMATIC S7 automation system structure, configuration, and parameterization • Operation of the SIMATIC STEP 7 software and basic programming • Familiarization with SIMATIC S7 programming options
	SIMATIC S7 programming 2	ST-PRO2 (5 days)	• Advanced programming options for SIMATIC STEP 7 • Commissioning distributed I/O • Integration of drives
	SIMATIC S7 programming 3	ST-PRO3 (5 days)	• Complex programming options with SIMATIC STEP 7 • Commissioning of distributed I/O with PROFINET IO • Recipe management with SIMATIC WinCC flexible
Programming languages	SIMATIC S7, programming with SCL	ST-7SCL (3 days)	• Formulating FBs, FCs, OBs etc. in SCL • Working with tags and symbolic block names • Control structures: IF, WHILE, REPEAT …
	SIMATIC S7, sequence control with S7-GRAPH	ST-7GRAPH (2 days)	• Design, structure and display types of sequencers with S7-GRAPH • Planning and configuration of sequencers • Programming, documentation and commissioning of chain blocks
	SIMATIC S7, graphical programming with CFC	ST-7CFC (2 days)	• CFC as a configuration interface for SIMATIC S7 • Placing, interconnection, parameter assignment and adjustment of the runtime properties of blocks • Compiling, loading, test mode

Technology	Course title	Order code (duration)	Content
Operator control and monitoring	SIMATIC WinCC, system course	ST-BWINCCS (5 days)	• Configuration of SIMATIC WinCC • WinCC options and add-ons for selected tasks • Qualification to use the system easily and quickly for custom applications
	SIMATIC WinCC, advanced course	ST-BWINOND (5 days)	• Using SIMATIC WinCC as a multi-user system (client-server architectures, WebNavigator) • Accessing the content of WinCC databases (WinCC Archive) with database options for higher-level applications (MES/ERP) • Effective configuration, structure and application of an engineering station, introduction to automated configuration and presentation of additional WinCC options
	SIMATIC WinCC flexible, system course 1	ST-WCCFSYS1 (3 days)	• Basic knowledge of SIMATIC WinCC flexible software • Configuration of simple machine and plant-specific operator control and monitoring tasks • Handling various operator control and monitoring stations
	SIMATIC WinCC flexible, system course 2	ST-WCCFSYS2 (3 days)	• Optimal use of WinCC flexible and WinCC flexible options • Further options for image design, such as trajectories, tag simulation for rotary motions and hotkeys • Options for operator guidance, multiplexing tags, structures for faceplates and curve array
Motion control	Technology CPU 315T-2DP, CPU 317T-2DP, CPU 317TF-2DP configuration	MC-T-CPU (5 days)	• Introduction to the motion control system SIMATIC technology CPU • Configuration and commissioning of the technology CPU and configuration of the Safety Integrated functions • Programming of motion sequences with PLCopen-compatible function blocks
	SIMATIC TDC/ Engineering with D7-SYS and CFC	SD-TDC (5 days)	• Working with the SIMATIC Manager • Hardware configuration for the SIMATIC TDC system • Optimal use of the kinematic transformation when automating handling systems

You can find further information and dates at:
siemens.com/sitrain

SIMATIC training for factory automation with STEP 7 V.5 and SIMATIC S7-300/-400

Course contents at a glance

Technology	Course title	Order code (duration)	Content
Industrial communication	Industrial Ethernet system course	IK-IESYS (3 days)	• Principle of operation, properties and components of SIMATIC NET Industrial Ethernet 10 / 100 / 1000 Mbps • Configuration of ISO and TCP connections • SIMATIC S7 diagnostic tools (NCM diagnostic tool)
	PROFINET system course	IK-PNSYS (3 days)	• Basics of PROFINET IO with configuration and programming, and PROFINET RT & IRT basics • Plant-wide engineering & diagnostics with the engineering tools • Presentation of integrated web services on PROFINET devices
	PROFIBUS system course	IK-PBSYS (3 days)	• Basics of PROFIBUS according to EN 50170/IEC 61158 • PROFIBUS devices and overview of network components • PROFIBUS diagnostics
	Actuator Sensor-Interface system course	IK-ASISYS (3 days)	• Basics of the actuator-sensor interface (AS-Interface) • Structure and configuration • Introduction to system components
	Understanding the OPC interface-system course	IK-OPCSYS (3 days)	• Advantages of OPC as a manufacturer-independent interface standard • Basics and options of the alarm & events, historical data access and XML interfaces • Commissioning a PC station with "Advanced PC Configuration"
	Engineering SINAUT ST7	IK-SINAUT (3 days)	• SINAUT ST7 system characteristics • Installation guidelines and configuration aids • Commissioning of TIM and modems
Safety engineering	CE Marking & Functional Safety in Machine and System Manufacturing	ST-FASAFN (3 days)	• Legal Situation • Risk assessment and reduction • Applying the standards of the functional safety and verification and validation
	Programming of safety related SIMATIC S7 controller via Distributed Safety	ST-PPDS (3 days)	• SIMATIC S7-300F (principle, system configuration and I/O), configuration of failsafe I/O with Distributed Safety • Programming a safety-oriented user program with failsafe PROFIsafe communication (CPU-CPU communication) • Diagnostic options (CPU diagnostics, I/O diagnostics, advanced diagnostic tools)

Technology	Course title	Order code (duration)	Content
SIMATIC S7 certification	Siemens Certified Service Technician Level 1	CP-FAST1 (3 days)	• Refresher for skills and knowledge from ST-SERV1 and ST-SERV2 • Practical test • Qualification: Siemens Certified SIMATIC Technician
	Siemens Certified Service Technician Level 2	CP-FAST2 (3 days)	• Refresher for skills and knowledge from ST-SERV1 to ST-SERV3 • Practical test • Qualification: Automation Technician Service in compliance with ZVEI
	Siemens Certified Programmer	CP-FAP (3 days)	• Refresher for skills and knowledge from ST-PRO1 to ST-PRO3 • Practical test • Qualification: Automation Technician Configuration in compliance with ZVEI
Industrial communication certification	Certified PROFINET Network Engineer	IK-PNOCPNE (2 days)	• PROFINET telegram concept • Real-time RT and isochronous real-time IRT • Qualification: Certified PROFINET Network Engineer
	Certified PROFINET Network Installer	IK-PNOCPNI (2 days)	• Overview and introduction to PROFINET technology • Device types for PROFINET IO: IO controller, IO device, IO supervisor • Qualification: Certified PROFINET Network Installer
	Switching in industrial networks with SCALANCE X products	IK-SWITCHS (2 days)	• Ethernet/Industrial Ethernet comparison • Redundancy mechanisms (MRP, HRP, Standby Redundancy Protocol, RSTP, Passive Listening, HSR, PRP) • Network segmentation with VLANs
	Routing in industrial networks with SCALANCE X products	IK-ROUTS (3 days)	• Static routing • Router redundancy (VRRP) • Dynamic routing (RIP, OSPF)
	Wireless LAN in industrial networks with SCALANCE W products	IK-IWLANS (3 days)	• Comparison and coexistence of different wireless technologies with introduction to WLAN access procedures • Security and high data rates in the WLAN • Planning and configuration of simple radio links (RCOAX, IPCF, IPCF-MC)
	Security in industrial networks with SIMATIC NET products	IK-SECIN-S (3 days)	• Current trends, safety risks, and implementation with the "Defense in Depth" holistic security concept • Potential dangers in a network, and basic security measures (ports, passwords, protocols, etc.) • Network segmentation (VLAN, routing), cell protection concept, access restriction and remote access via VPN

You can find further information and dates at: siemens.com/sitrain

SIMATIC training for factory automation with SIMATIC S7-1500 in the TIA Portal

SIMATIC S7 service and programming training			Programming languages
Service training	**Programming training**		
		Learning path	
SIMATIC Service 1 in the TIA Portal TIA-SERV1	SIMATIC programming 1 in the TIA Portal TIA-PRO1	**Level 1**	
SIMATIC Service 2 in the TIA Portal TIA-SERV2	SIMATIC programming 2 in the TIA Portal TIA-PRO2	**Level 2**	
	SIMATIC system retraining course SIMATIC S7-1500 in the TIA Portal TIA-SYSUP		SIMATIC programming with S7-GRAPH in the TIA Portal TIA-GRAPH
			SIMATIC programming with S7-SCL in the TIA Portal TIA-SCL
Siemens Certified Service Technician Level 1 in the TIA Portal CPT-FAST1		**Certification**	
SIMATIC Service 3 in the TIA Portal TIA-SERV3	SIMATIC programming 3 in the TIA Portal TIA-PRO3	**Level 3**	
Siemens Certified Service Technician Level 2, in the TIA Portal CPT-FAST2	Siemens Certified Programmer, in the TIA Portal CPT-FAP	**Certification**	

Courses can be freely selected in any order within individual levels.

Advanced courses

Op. control and monitoring	Motion control	Industrial communication	Safety engineering
SIMATIC WinCC SCADA in the TIA Portal retraining course TIA-WCCSUP	**SINAMICS G120 - parameterizing and commissioning** DR-G12-PM		**CE Marking & Functional Safety in Machine and System Manufacturing** ST-FASAFN
SIMATIC WinCC on the machine level in the TIA Portal TIA-WCCM		**PROFINET with Industrial Ethernet in the TIA Portal** IK-TIAPN	**SIMATIC safety related programming with STEP 7 Safety in the TIA Portal** TIA SAFETY
SIMATIC WinCC SCADA in the TIA Portal TIA-WCCS			
		Certified PROFINET Network Engineer IK-PNOCPNE	
		Certified PROFINET Network Installer IK-PNOCPNI	
		Switching in industrial networks with SCALANCE X products IK-SWITCHS	
		Routing in industrial networks with SCALANCE X products IK-ROUTS	
		Wireless LAN in industrial networks with SCALANCE W products IK-IWLANS	
		Security in industrial networks with SIMATIC NET products IK-SECIN-S	

SIMATIC training for factory automation with SIMATIC S7-1500 in the TIA Portal

Course contents at a glance

Technology	Course title	Order code (duration)	Content
SIMATIC S7 Service training	SIMATIC Service 1 in the TIA Portal	TIA-SERV1 (5 days)	• Basic knowledge about the SIMATIC S7 automation system structure, configuration, and parameterization • Operation of the TIA Portal components SIMATIC STEP 7, SIMATIC WinCC, and SIMATIC NET • Familiarization with service options regarding SIMATIC S7
	SIMATIC Service 2 in the TIA Portal	TIA-SERV2 (5 days)	• Hardware and software diagnostic functions of the TIA Portal in the SIMATIC S7 automation system • Commissioning of distributed I/O on PROFINET IO • Integration of drives
	SIMATIC Service 3 in the TIA Portal	TIA-SERV3 (5 days)	• Commissioning of a TIA system with software debugging and troubleshooting • Diagnostics, error evaluation and handling with SIMATIC STEP 7 • Error diagnostics in a PROFINET IO system with an HMI device
SIMATIC S7 Programming training	SIMATIC programming 1 in the TIA Portal	TIA-PRO1 (5 days)	• Overview and key features of the SIMATIC S7 system family • Handling of the TIA Portal components SIMATIC STEP 7, SIMATIC WinCC and SIMATIC NET • Familiarization with various SIMATIC S7 programming options
	SIMATIC programming 2 in the TIA Portal	TIA-PRO2 (5 days)	• Advanced programming options for SIMATIC STEP 7 • Classic software error handling/evaluation using error organization blocks (OBs) • Introduction to the Structured Control Language (SCL) and S7-GRAPH
	SIMATIC programming 3 in the TIA Portal	TIA-PRO3 (5 days)	• Functions, function blocks, and multi-instances • Complex programming options with SIMATIC STEP 7 • Administration of a recipe database in the operator control and monitoring system (HMI)
Service and programming training – migration	SIMATIC system retraining course for SIMATIC S7-1500 in the TIA Portal	TIA-SYSUP (5 days)	• TIA Portal components: SIMATIC STEP 7 and SIMATIC WinCC • Configuration of devices and networks of the SIMATIC S7 system family • Migration of a SIMATIC STEP 7 V. 5.x project and a SIMATIC WinCC flexible project to SIMATIC STEP 7 or SIMATIC WinCC in the TIA Portal

Technology	Course title	Order code (duration)	Content
Programming languages	SIMATIC programming with S7-SCL in the TIA Portal	TIA-SCL (3 days)	• Complete scope of language and performance of the Structured Control Language (SCL) development environment • Creation, commissioning and testing of custom SCL programs • Formulation of functions and function blocks in SCL, including working with tags and symbolic block names
	SIMATIC programming with S7-GRAPH in the TIA Portal	TIA-GRAPH (2 days)	• Creation, commissioning and testing of custom step chains • How to program interlocking and monitoring • Use of event-controlled actions, including properties of simultaneous and alternative branches
Operator control and monitoring	SIMATIC WinCC SCADA in the TIA Portal retraining course	TIA-WCCSUP (3 days)	• Main differences between SIMATIC WinCC V7.x and SIMATIC WinCC in the TIA Portal • Creation of a SIMATIC WinCC project in the SCADA area based on the TIA Portal engineering platform • Archiving messages and values, and conception and implementation of the corresponding archives
	SIMATIC WinCC on the machine level in the TIA Portal	TIA-WCCM (3 days)	• Simple configuration of machine and plant-specific operator control and monitoring tasks with SIMATIC WinCC on the basis of the TIA Portal • Design and dynamization of graphic displays • Archiving messages and values, and conception and implementation of the corresponding archives
	SIMATIC WinCC SCADA in the TIA Portal	TIA-WCCS (5 days)	• Creation and dynamization of a SIMATIC WinCC project in the SCADA area on the basis of the TIA Portal engineering platform • Configuring the connection to the SIMATIC S7 automation system • Trend plotting and message representation, including logging of data in the database
Motion control	SINAMICS G120 parameterizing and commis-sioning	DR-G12-PM (2 days)	• Step-by-step commissioning of the SINAMICS G120 drive • Parameter assignment and data backup with STARTER software • Correct parameter assignment of the drive to ensure reliable operation of the entire plant

SIMATIC training for factory automation with SIMATIC S7-1500 in the TIA Portal

Course contents at a glance

Technology	Course title	Order code (duration)	Content
Industrial communication	PROFINET with Industrial Ethernet in the TIA Portal	IK-TIAPN (4 days)	• Basics of Industrial Ethernet, PROFINET IO, RT&IRT and media redundancy • PROFINET IO with configuration, programming and diagnostics in the TIA Portal • Use and configuration of shared device, I-device and controller-controller data communication
Safety engineering	CE Marking & Functional Safety in Machine and System Manufacturing	ST-FASAFN (3 days)	• Legal Situation • Risk assessment and reduction • Applying the standards of the functional safety and verification and validation
	SIMATIC safety related programming with STEP 7 Safety in the TIA Portal	TIA-SAFETY (3 days)	• SIMATIC S7-1500F (principle, system configuration and I/O), configuration of failsafe I/O with STEP 7 Safety Advanced • Programming a safety-related user program with failsafe PROFIsafe communication (CPU-CPU communication) • Diagnostic options (CPU diagnostics, I/O diagnostics, advanced diagnostic tools)

Technology	Course title	Order code (duration)	Content
SIMATIC S7 certification	Siemens Certified Service Technician Level 1 in the TIA Portal	CPT-FAST1 (3 days)	• Refresher for skills and knowledge from TIA-SERV1 and TIA-SERV2 • Practical test • Qualification: Siemens Certified SIMATIC Technician
	Siemens Certified Service Technician Level 2, in the TIA Portal	CPT-FAST2 (3 days)	• Refresher for skills and knowledge from TIA-SERV1 to TIA-SERV3 • Practical test • Qualification: Automation Technician for Service in compliance with ZVEI
	Siemens Certified Programmer, in the TIA Portal	CPT-FAP (3 days)	• Refresher for skills and knowledge from TIA-PRO1 to TIA-PRO3 • Practical test • Qualification: Automation Technician for Configuration in compliance with ZVEI
Industrial communication certification	Certified PROFINET Network Engineer	IK-PNOCPNE (2 days)	• PROFINET telegram concept • Real-time RT and isochronous real-time IRT • Qualification: Certified PROFINET Network Engineer
	Certified PROFINET Network Installer	IK-PNOCPNI (2 days)	• Overview and introduction to PROFINET technology • Device types for PROFINET IO: IO controller, IO device, IO supervisor • Qualification: Certified PROFINET Network Installer
	Switching in industrial networks with SCALANCE X products	IK-SWITCHS (2 days)	• Ethernet/Industrial Ethernet comparison • Redundancy mechanisms (MRP, HRP, Standby Redundancy Protocol, RSTP, Passive Listening, HSR, PRP) • Network segmentation with VLANs
	Routing in industrial networks with SCALANCE X products	IK-ROUTS (3 days)	• Static routing • Router redundancy (VRRP) • Dynamic routing (RIP, OSPF)
	Wireless LAN in industrial networks with SCALANCE W products	IK-IWLANS (3 days)	• Comparison and coexistence of different wireless technologies with introduction to WLAN access procedures • Security and high data rates in the WLAN • Planning and configuration of simple radio links (RCOAX, IPCF, IPCF-MC)
	Security in industrial networks with SIMATIC NET products	IK-SECIN-S (3 days)	• Current trends and safety risks, and their implementation with the "Defense in Depth" holistic security concept • Potential dangers in a network, and basic security measures (ports, passwords, protocols, etc.) • Network segmentation (VLAN, routing), cell protection concept, access restriction and remote access via VPN

Find out more:
siemens.com/sitrain

Find out more about SITRAIN Training for Industry and experience how courses directly from the manufacturer enable you to gain optimal benefit from your Siemens products and systems.

More on Siemens
Industry Training

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