

# SIMATIC Controller Software

Tools for configuring and programming  
SIMATIC Controllers

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## SIMATIC Software

Answers for industry.

**SIEMENS**

# SIMATIC Controller Software

## Universal automation software

Automation projects require maximum efficiency. SIMATIC Controller Software provides an integrated engineering environment with top-class tools for the widest range of working methods and applications. These tools are based on an integrated system, offer open interfaces, generate reusable function blocks, and thus save engineering time.

### SIMATIC STEP 7

STEP 7 is a complete engineering package which supports the complete engineering workflow during a project. Users can thus increase productivity and reduce engineering costs.

- Standard languages based on IEC 61131-3 facilitate the initial training for programmers and maintenance engineers.
- Libraries with reusable blocks, together with the application of a joint database, reduce input requirements.
- A common engineering environment for SIMATIC S7-300 and S7-400 controllers as well as PC-based Automation with SIMATIC WinAC software controllers allows user programs to be executed on different platforms.
- Efficient diagnostics enhances plant availability.

### Typical applications

STEP 7 is suitable for configuring and programming automation tasks in all industries. OEMs, system integrators, consulting engineers, plant operators, and maintenance engineers profit in equal manners. Fields of application include:

Configuring and programming of standard and safety-related applications, configuring of communication links, connection of visualization and motion control systems, commissioning and diagnostics.



STEP 7 is used in both discrete production automation and process automation.

### Universal development environment

STEP 7 comprises the following components:

- Configuring:  
SIMATIC Manager, Hardware Config
- Development and debugging of IEC languages:  
LAD, FBD, STL, SCL, Graph
- Commissioning:  
Integrated system diagnostics and online functionality
- Operation and maintenance:  
P-Diag, TeleService

Supported operating systems	STEP 7 V5.5 and STEP 7 Professional 2010	STEP 7 V5.5 SP1 and STEP 7 Professional 2010 SR1S
Windows XP Professional SP2	•	•
Windows XP Professional SP3	•	•
Windows 7 Professional/Enterprise/Ultimate (32 Bit)	•	•
Windows 7 Professional/Enterprise/Ultimate SP 1 (32 Bit)	•	•
Windows Server 2003 SP2	•	•
Windows 7 Professional/Enterprise/Ultimate (64 Bit)		•
Windows 7 Professional/Enterprise/Ultimate SP 1 (64 Bit)		•
Windows Server 2008 Standard Edition R2 (64 Bit)		•
Windows Server 2008 Standard Edition R2 SP1 (64 Bit)		•

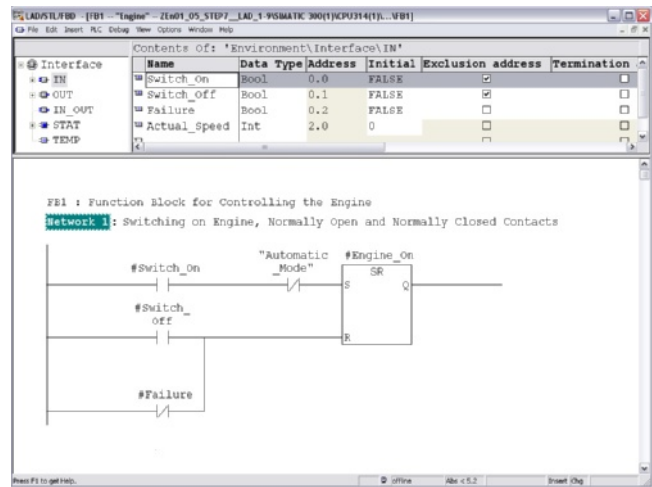
## Standard tools

STEP 7 Professional, all IEC languages in one package

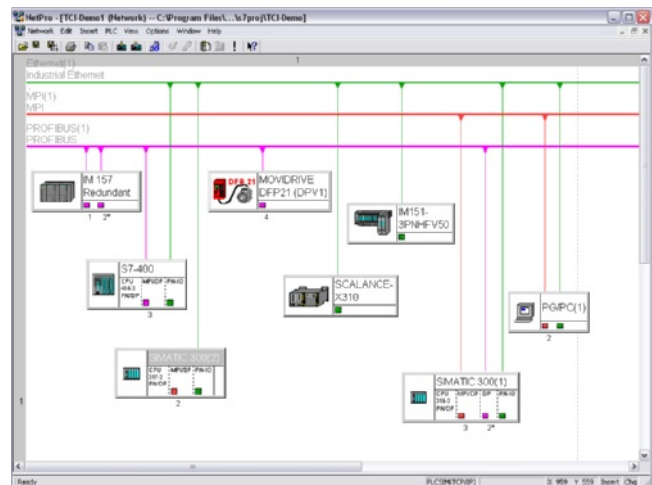
- STEP 7 Basis with LAD, FBD, STL, network configuration, and integrated system diagnostics
- S7-SCL, textual high-level language ST (Structured Text)
- S7-Graph to program sequence controls
- S7-PLCSIM for off-line debugging and simulation

STEP 7 Standard Package:

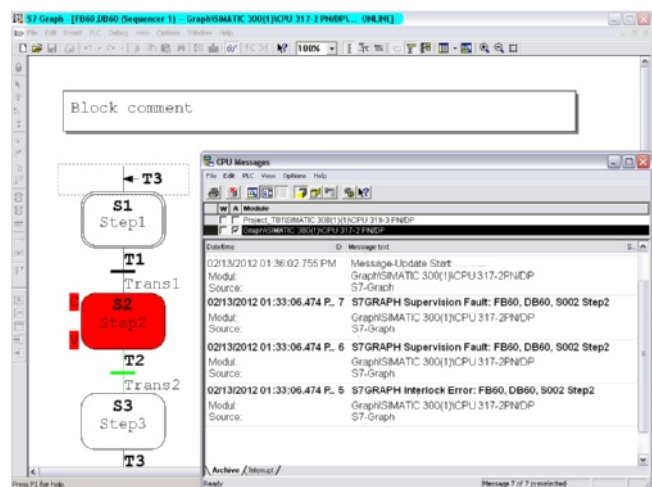
- Configuring and programming of SIMATIC controllers and distributed I/O
- Creation and debugging of user programs in LAD, FBD, and STL
- Network configuration
- Integrated system diagnostics



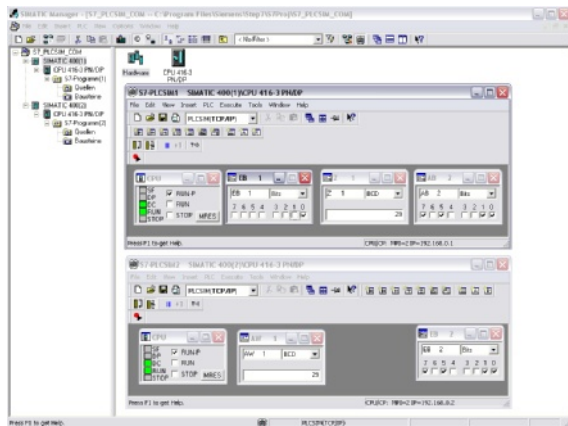
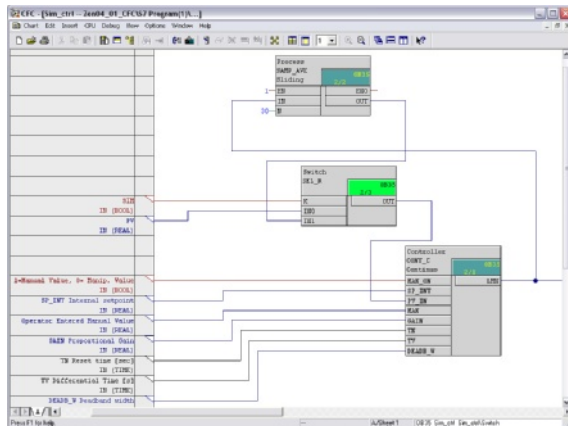
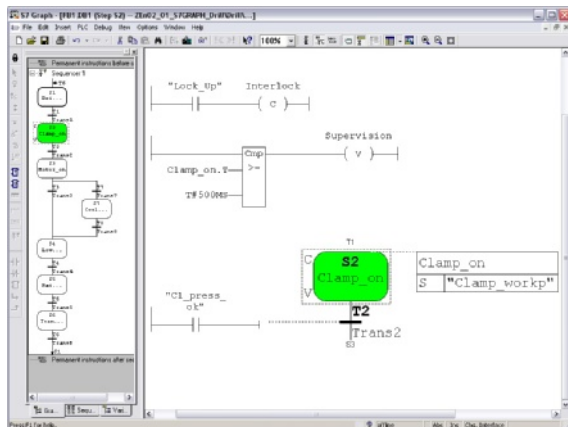
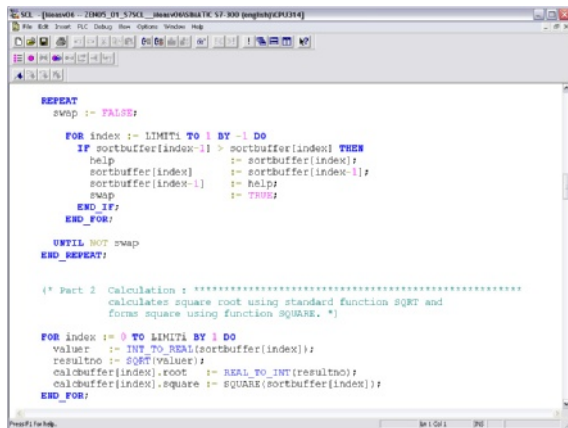
Programming language LAD – clear representation in the ladder diagram



NetPro – configuration of network connections using graphic interconnections



Diagnostics with "Report system errors" – display of automatically generated error messages of the hardware components



## Engineering tools

### S7-SCL

- IEC 61131-3: Textual high-level language ST (Structured Text)  
Certificate: Reusability level
- Programming of complex algorithms, arithmetic functions, and data processing tasks

### S7-GRAPH

- IEC 61131-3: Sequential function chart  
Certificate: Base level
- Configuration of sequential processes in standardized representation
- Clear representation facilitates maintenance, modification, adaptation

### CFC

- Interconnection instead of programming – particularly suitable for continuous processes
- Ready-to-use function blocks are interconnected and parameterized
- Graphic representation of program hierarchy

### S7-PLCSIM

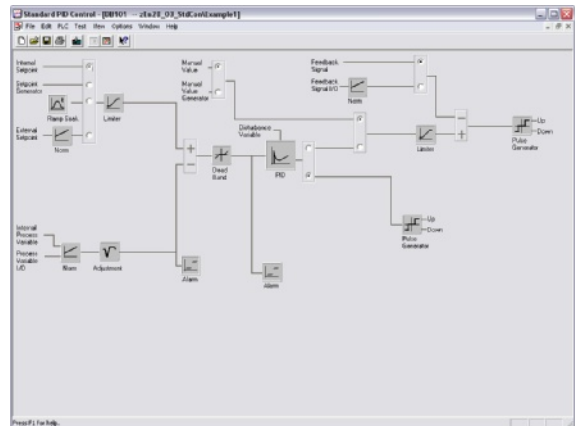
- Simulation of S7-300, S7-400, and WinAC to reduce the commissioning time
- Software debugging without controller



## Configuration of closed-loop controls

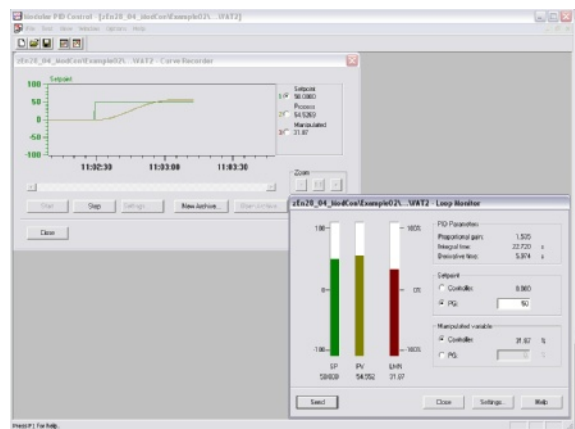
### Standard PID Control

- For small to medium control tasks
- Simple adaptation of preconfigured controller structure to different processes
- Changes to parameters possible in RUN mode



### Modular PID Control

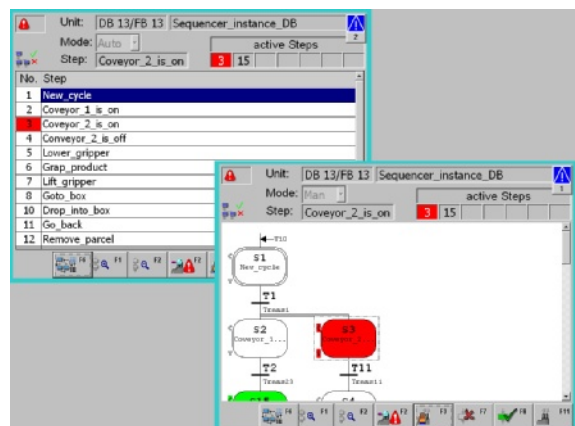
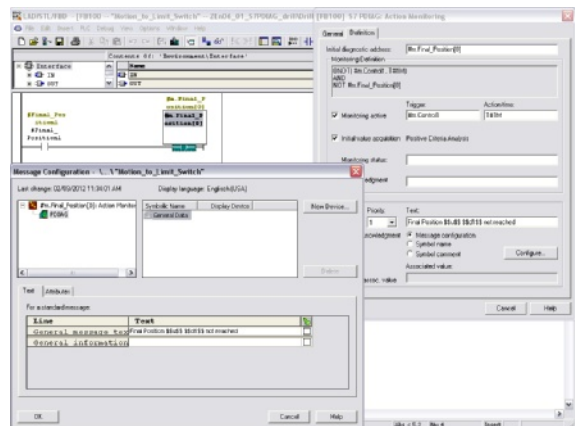
- Closed-loop control blocks for any controller structures
- Scalable and flexible

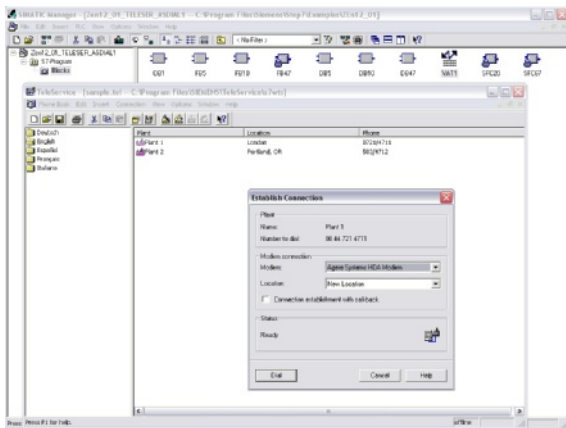


## Process diagnostics

### S7-PDiag and ProAgent

- Generate process diagnostics without large additional overhead in the user program
- Unambiguous reporting of process errors in the HMI system including representation in LAD for exact fault locating
- Powerful diagnostics tools which significantly reduce both development costs and downtimes





## Remote maintenance

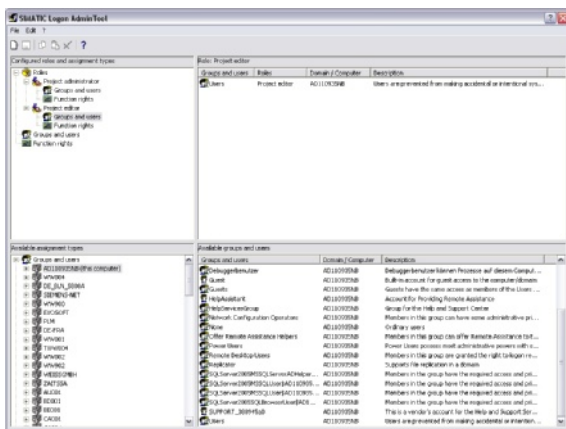
### TeleService

- Remote access to the plant to reduce the traveling/personnel costs associated with servicing.
- Remote maintenance permits access to both the CPU and the HMI system using STEP 7 and the engineering tools.
- The offering includes adapters with integrated modem, software with management of access data, and function blocks for remote maintenance, remote link, and alarm by means of SMS text message or fax.

## Data security

### SIMATIC Logon

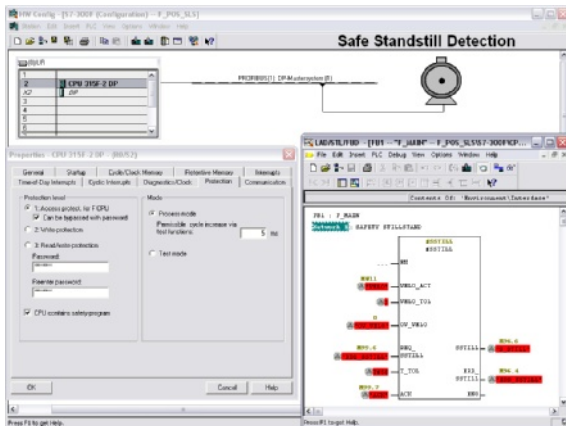
- Definition of access privileges for projects and libraries
- Generation of change log



## Safety functions for fail-safe controllers

### S7 Distributed Safety

- Ready-to-use, certified blocks support the programming of fail-safe applications and parameterization of the fail-safe I/O



## Application-oriented licensing

The licensing model for SIMATIC software offers a tailor-made solution for each application:

Trial License – the license for evaluation

- For a limited period (14 days)
- For test and evaluation purposes

Floating License - the license per user

- Enables access for any user
- Regardless of the number of installations

Single License – the license per installation

- Enables one installation

### The Software Update Service always keeps you up-to-date

The SIMATIC software is subject to continuous further development and improvement. The Software Update Service is the most convenient way of benefiting from these improvements.

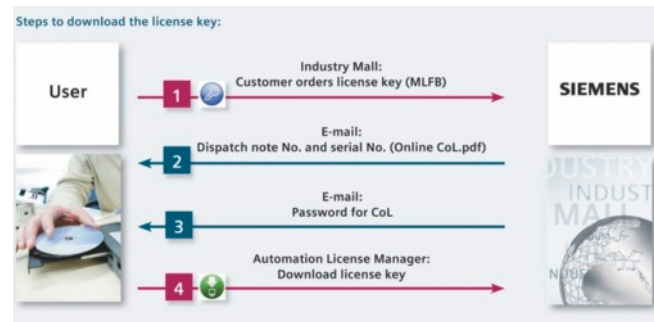
It ensures automatic delivery of all new software versions that are released after ordering of the Software Update Service. As a result, your software is always up-to-date.

### SIMATIC Field PG M3 – the rugged and powerful industrial notebook



SIMATIC programming devices are the first choice as the hardware base for configuring and programming with SIMATIC Controller Software. The SIMATIC Field PG M3 boasts wireless technology, a powerful Intel Core i5 processor, and a 15.6" widescreen display. In addition, the new device has a long battery life, large work memory, SIMATIC interfaces, and all common interfaces for industrial applications.

## Online software delivery



### Download of license key from Internet

The license key for registering software licenses can also be downloaded from the Internet in the case of selected, current software products for specific countries. Online software delivery allows much faster availability of the software at any global location. Furthermore, electronic handling of orders and downloads makes a contribution toward reducing administration and storage costs.

How the download works:

- Customers order the license key electronically using the Industry Mall.
- They receive a delivery note and serial number in one mail, and the password in a further, separate mail.
- Using the serial number and password, secure downloading is possible using the Automation License Manager.

Further information:

[www.siemens.com/tia-online-software-delivery](http://www.siemens.com/tia-online-software-delivery)

## Get more information

System features:

**[www.siemens.com/simatic-system-features](http://www.siemens.com/simatic-system-features)**

SIMATIC Guide manuals:

**[www.siemens.com/simatic-docu](http://www.siemens.com/simatic-docu)**

Information material to download:

**[www.siemens.com/simatic/printmaterial](http://www.siemens.com/simatic/printmaterial)**

Service & Support :

**[www.siemens.com/automation/support](http://www.siemens.com/automation/support)**

SIMATIC contacts:

**[www.siemens.com/automation/partner](http://www.siemens.com/automation/partner)**

Industry Mall for ordering on the Internet:

**[www.siemens.com/industrymall](http://www.siemens.com/industrymall)**

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