

SIEMENS

SIMATIC Industrial Software STEP 7 Professional

Product Brief

November 2000

The costs for automating a project are becoming increasingly dependent on the engineering input. Modern engineering tools provide an effective possibility for saving costs in this sector. A combination of application-oriented software tools guarantees maximum productivity even with complex automation tasks. We therefore recommend STEP[®] 7 Professional. This comprises the proven programming languages LAD, FBD and STL, supplemented by three powerful engineering tools:

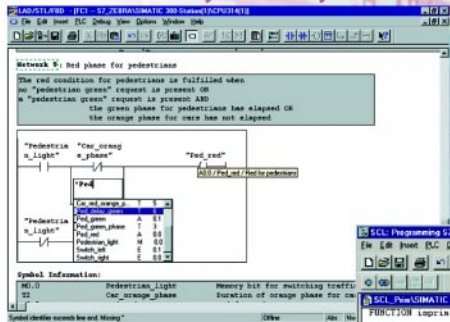
- S7-GRAPH for the graphical programming of sequential controls
- S7-SCL, the high-level language with which even highly complex tasks can be solved without problem
- S7-PLCSIM for offline simulation of your automation solution

STEP 7 Professional thus contains all programming languages complying with the international standard IEC 61131. This multi-vendor standardization makes a major contribution to cost savings with software engineering.

You can use STEP 7 Professional to configure and program both the SIMATIC[®] S7 and C7 PLC-based controllers as well as the SIMATIC WinAC[®] controller for PC-based automation. You can therefore freely select your hardware platform, and can even use the same tool with mixed configurations (e.g. PC for central control tasks with subordinate small control systems).

This description presents current innovations for the basic STEP 7 tools, and describes the facilities additionally provided by the engineering tools.

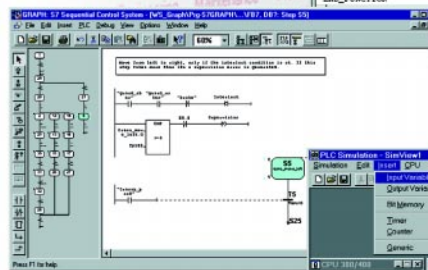
KOP, FUP, AWL



S7-SCL

```
FUNCTION Impuls BOOL
VAR_TEMP
  D: DINT;
  M: DINT;
  P: DINT;
  END_VAR
BEGIN
  Impuls := TRUE; m := 2; p := n;
  WHILE m > 0 && p > 0
  IF p MOD m = 0 THEN
    Impuls := FALSE;
    exit: //p := 0; // Force loop exit
  m := m - 1;
  END_IF;
  END_WHILE;
END_FUNCTION
```

S7-GRAPH



S7-PLCSIM

Simulation Edit CPU Execute View Options Window Help

Memory: F4
Timer: F11
Counter: F12
Generic: Out-F2

Access & Status Window

Accumulators	Status Window
1	Dec 8 F
2	7 F
3	6 F
4	5 F
5	4 F
6	3 F
7	2 F
8	1 F

Address Registers

1	BB
2	BB
3	BB
4	BB

Block Flags

Date/Block	Code/Block
1	FCB 0
2	FCB 0
3	FCB 0
4	FCB 0

Shows a Peripheral Input Variable

STEP 7 V5 - New functions

New with the LAD/FBD/STL manager

With Version 5, program development in LAD, FBD and STL has been improved even further:

Selection list for symbols

When editing the links, the symbol names no longer have to be typed in by hand. You can simply select them from a list by clicking with the mouse. You can also create or adjust a symbol definition at this point without having to open the whole symbol table (Fig. 1).

Improved usability

- Multi-stage "undo" in both directions using icons
- Cut & paste for more than one network
- Display of subnetworks in different colors
- Lasso function to select elements
- Fast adding of symbols, blocks, instructions and FC/FB calls using the "empty box"
- "Tooltips" on the contacts with complete symbol information

New with the SIMATIC Manager

Block consistency test

If the interfaces or the code of individual blocks have to be modified or supplemented during program development or subsequently, the required input for the corrections may be extremely high. The block consistency test handles a large portion of this work for you. In the case of blocks whose consistency cannot be corrected automatically, the function guides you to the positions to be changed in the associated editor where you can carry out the required modifications. All block inconsistencies are eliminated step-by-step, and the blocks then compiled.

Language support

This function is particularly interesting for customers dealing in export. The function supports the creation and handling of project texts in several languages. The texts to be translated are exported from STEP 7, processed using an ASCII editor or spreadsheet program (e.g. MS EXCEL), and subsequently imported back into STEP 7.

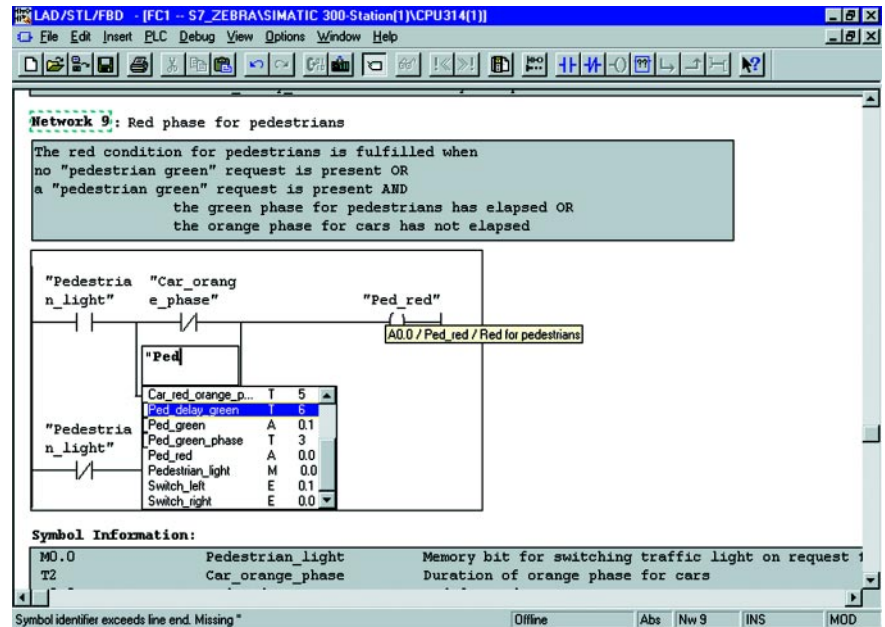


Fig. 1: Selection list for symbols (left) and "Tooltips" on the contacts (right)

A project is then available in different languages. You can switch between the various languages in the SIMATIC Manager.

The following texts can be stored in several languages:

- Block titles and comments
- Network titles and comments
- Line comments from STL programs
- Comments from symbol tables, tables for variable declarations, user-defined data types and data blocks
- Comments, status names and transition names in HiGraph® programs
- Extensions to step names and comments in S7-GRAPH programs
- Message texts generated by STEP 7
- System text libraries

Saving of project data on the CPU

In addition to the actual application program, the complete project data can be saved on the CPU's memory card.

These data can be simply read for servicing purposes. They need not be stored on the programming device. The danger that different versions

could be interchanged is therefore eliminated. This function was previously only supported by the CPUs of the S7-400. It will be available soon for further SIMATIC CPUs.

Leading symbols

Simplify adaptation to new addresses. You have the choice whether the symbolic or absolute address should be leading when changes are made. If the symbolic address is leading, it makes it particularly easy to transfer an existing program to different hardware with different addresses (Fig. 2).

New with the hardware configuration

Direct monitoring/control of modules

Inputs and outputs of the configured input/output modules can be addressed directly without having to select the application. The inputs/outputs can then be monitored (with cyclic updating) or controlled. Thus parameterization and testing of the hardware can be carried out in one operation.

STEP 7 V5 - New functions (continued)

New with monitoring and control of variables

Improved usability

- Representation of status using symbols to provide improved perception
- Insertion/deletion of lines
- Switching individual table lines to ineffective
- Modification of number formats for representation
- Comprehensive context menus and direct help
- Table of variables can always be kept in the foreground
- Identification of forced variables

System diagnostics

The function "Signal system errors" offers a convenient method for displaying the diagnostics information provided by the controller's hardware components in the form of messages. The required blocks and message texts are automatically generated by STEP 7. It is only necessary to load the generated blocks into the CPU. Transfer of the diagnostics texts to SIMATIC HMI® devices does not require any programming. This functionality is still in preparation for a number of SIMATIC HMI devices.

Import/export interface to ASCII file format

To date, it has been possible to import and export the following in ASCII file format:

- Programs (since V3),
- Symbol definition (since V3) and now also:
- Hardware configuration (from V5.0).

This means that all project data can now be electronically processed, e.g. to incorporate them into revision control systems or as an interface to CAE systems such as SIGRAPH EMR. The export interface can also be used for backing up data.

The import interface can also be used to adjust the hardware configuration on site, e.g. on setup. This means that you no longer need to overwrite the whole project, just the HW-Config file.

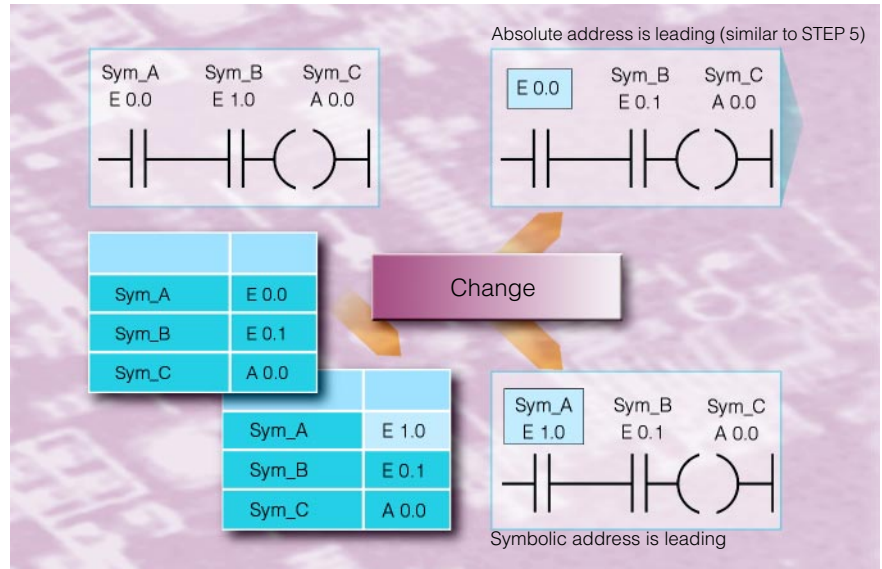


Fig. 2: Network templates for frequently occurring links

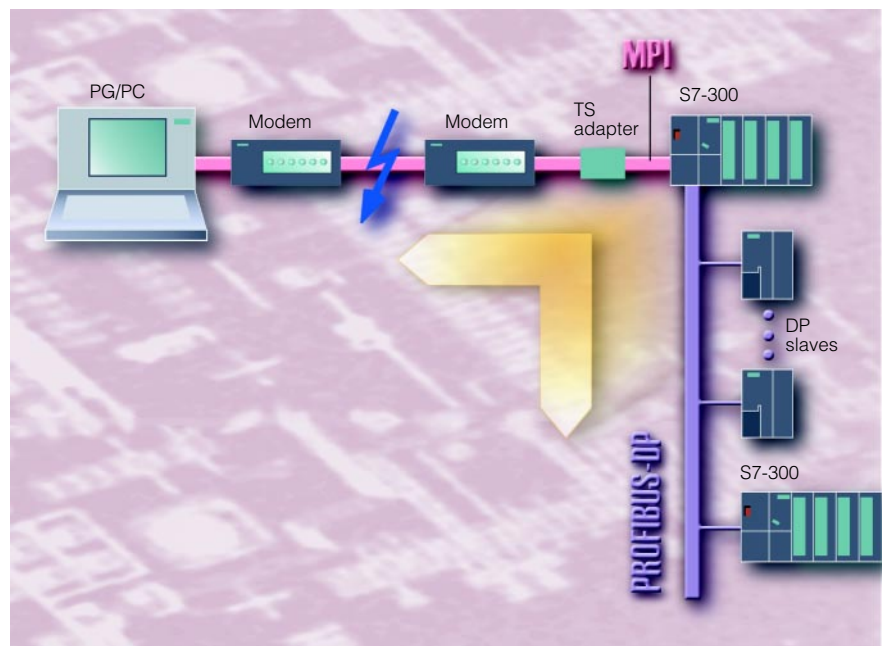


Fig. 3: STEP 7 V5 Routing - PG functions across network limits, also used for TeleService

STEP 7 V5 Routing

The new routing function means that programming can be carried out across network limits. A programming device which is connected to the CPU or communications module via an MPI cable can now also program and maintain the devices (masters) connected

to the CPU via PROFIBUS-DP (see Fig. 3). This means:

- Easier to operate
- Centralized programming
- Centralized data backup
- Increased TeleService functionality.

S7-GRAPH

S7-GRAPH: sequential controls – no problem

The SIMATIC software package S7-GRAPH is based on the STEP 7 programming software. It is used for sequences with alternate or parallel steps. The sequences are configured and programmed clearly and rapidly on a standardized user interface (according to IEC 1131-3, DIN EN 61131).

The process is described graphically, and divided into individual steps with an easily comprehensible scope of functions. Actions can be defined for the steps, and their execution controlled. Transitions control the conditions required for the next step. Interlock and monitoring conditions are defined for each step.

An interlock includes the prerequisites for execution of actions, and monitoring conditions serve to detect faults in the sequence.

Advantages compared to LAD, FBD, STL

- Clear configuring of the process in the draft phase; also advantageous in all other process phases
- LAD, FBD and STL are mainly used for logic controls. With S7-GRAPH, the process sequence is of major importance
- Clear graphic representation of process using sequence chains; this results in easy maintenance and adaptation of programs if necessary
- Troubleshooting with integral diagnostics functions results in minimization of expensive down times, in particular for manufacturing processes

Design

An S7-GRAPH sequence chain block consists of the sequence chains and a general administrative section. S7-GRAPH offers adjustable compiler options for linking of this section:

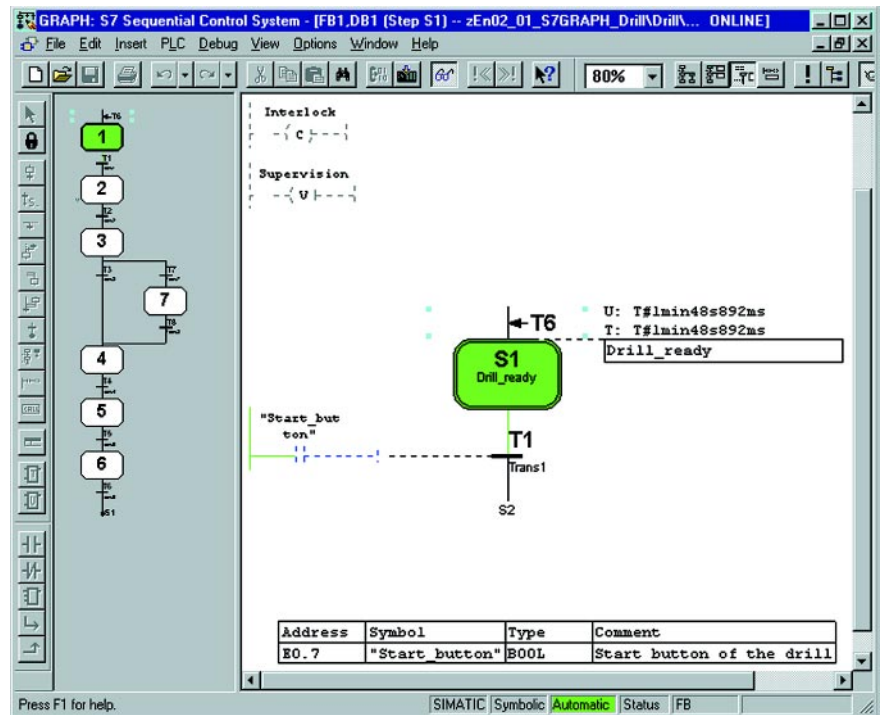


Fig. 4: S7-GRAPH in monitoring mode

- Option independent running: the required administrative section (approx. 5 Kbyte) is then included in every function block generated by S7-GRAPH. This is the solution for small applications with only one sequence chain block.
- Option with standard FC: the administrative section is stored in a separate block. This standard block exists only once in each project and is used by all sequence chain blocks. The memory requirement is 8 Kbyte or 10 Kbyte depending on the type of standard FC selected.
- Flexible design of sequential controls; simultaneous and alternative branching, branches within sequence chains, activation and deactivation of step
- Programming in LAD or FBD; all transitions, interlocks and monitoring conditions can be programmed in LAD or FBD
- Extensive scope of language elements for simple programming of conditions and actions; simple arithmetic commands (+, -) or counters/timers can also be directly programmed as an action in the step
- Consecutive numbering of steps on request
- Online functions; display of active steps, status of interlocking, monitoring and self-enabling conditions, as well as executed actions
- Different views with compact display of sequence chains:
 - Overview diagram
 - Single-page display
 - Detail display pertaining to a step
- Compact, clear printing of sequence chains; each page of the printout contains references to the adjacent pages

S7-GRAPH (continued)

- Good performance through selective processing of steps. The processing time required for a sequence of steps is independent of the number of steps
- Linking to project-wide documentation system (DOCPRO)
- Synchronization functions; sequences can be controlled and synchronized with the current condition of the plant/machine directly from the PC
- User-defined interface; two possibilities are available for the call interface of the sequence block:
 - Predefined parameter sets; either mini, standard or maxi can be selected

- User-defined parameters for flexible adaptation to the application.

Process diagnostics

The S7-GRAPH and ProAgent software packages (from the SIMATIC HMI range) permit fast, specific process diagnostics in plants and machines by determining information on the fault location and diagnosis.

The software packages

- optimally support plant and machine personnel in the tracing and elimination of faults,
- increase plant availability,
- shorten down times.

The data relevant to diagnostics are automatically generated by S7-GRAPH. It is only necessary to activate the corresponding option in the compiler.

ProAgent effectively uses the diagnostics data generated by S7-GRAPH. The display contents for diagnosis and control of the plant/machine are automatically created by ProAgent.

ProAgent is as an optional package for ProTool® and WinCC®:

- From ProTool V3 onwards for OP25, OP27, OP35, OP37
- From WinCC V4 onwards for PC FI25, PC FI45, OP47.

S7-GRAPH		
Display	Vector graphics	
Sequence control/structure	Control in function block, structure in data block	
Sequences per function block	8	
Steps per sequence	250	
Parallel branches	250	
Alternative branches	250	
Transition	32 conditions	
Step	<ul style="list-style-type: none"> ▪ 32 interlocking conditions ▪ 32 monitoring conditions ▪ 100 actions with system-internal qualifiers 	
Memory requirements		
Sequence management	With option "Independent running" 5 Kbyte per sequence block	With option "With standard FC" (common use of standard FC for all sequence blocks of a CPU) <ul style="list-style-type: none"> ▪ FC 70/71 approx. 8 Kbyte (from V 4.0, only standard call interface) ▪ FC 72 approx. 10 Kbyte (from V 5.0, required with user-defined call interface; can also be used for standard call interface)
Sequence	n x 150 byte (n = number of steps in sequence)	

S7-SCL

The high-level language for S7-300/400 and C7

Application

S7-SCL (**S**tructured **C**ontrol **L**anguage) is a high-level language based on PASCAL for programmable controllers.

S7-SCL corresponds to the high-level text language ST (**S**tructured **T**ext) defined in DIN EN/IEC 61131-3.

S7-SCL is particularly suitable for programming complex algorithms and mathematical functions, or for data processing tasks.

S7-SCL permits:

- Simple, fast program development hardly prone to errors by application of powerful language elements such as IF...THEN...ELSE.
- Improved comprehensibility by using clear programs and improved structuring. The programs are then easy to modify and reuse.
- Simplified program testing at high language level using debugger.

The user is then able to formulate solutions for all automation tasks cost-effectively and within a short time.

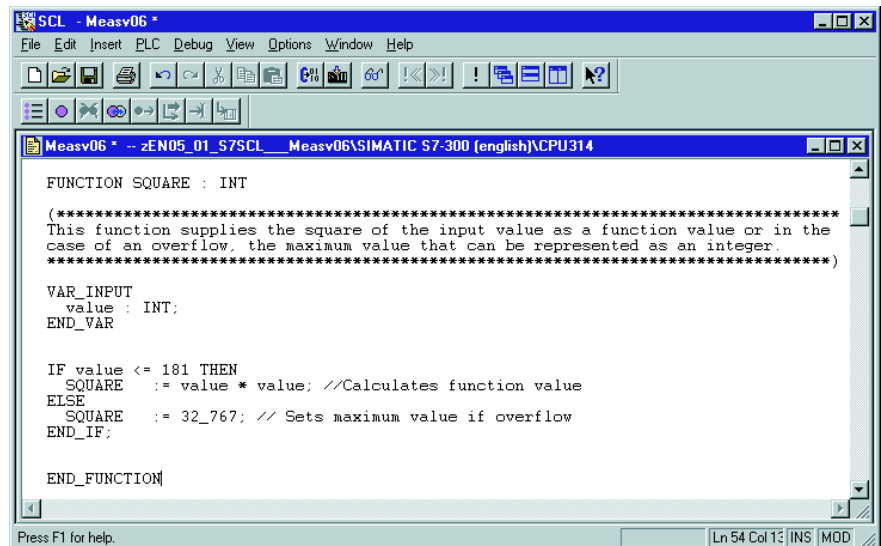
The software can be used for all SIMATIC S7-300 (recommended from CPU 314 onwards), SIMATIC S7-400 and SIMATIC C7 automation systems.

Principle of operation

S7-SCL programs are programmed as ASCII sources and are therefore easy to import and export. The S7-SCL editor provides various templates which need only be filled in.

- Templates for blocks (e.g. function blocks and data blocks)
- Templates for block comments, parameters and constants
- Templates for control structures (IF, CASE, FOR, WHILE, REPEAT) which contain the exact syntax.

Extremely efficient programming is possible using these templates.



```
FUNCTION SQUARE : INT
(*****
This function supplies the square of the input value as a function value or in the
case of an overflow, the maximum value that can be represented as an integer
*****)
VAR_INPUT
value : INT;
END_VAR

IF value <= 181 THEN
    SQUARE := value * value; //Calculates function value
ELSE
    SQUARE := 32_767; // Sets maximum value if overflow
END_IF;

END_FUNCTION
```

Fig. 5: Declaration and statement sections of a function block

Functions

S7-SCL has been assigned the Base Level certificate of PLCopen¹⁾ and possesses the following functionalities:

- Integral user interface with editor, compiler and debugger
- Language elements from high-level language programming, e.g. loops, alternative branches and branch distributors.
- S7-SCL blocks can be simply exported into a CFC library.
- PLC-typical language extensions, e.g. addressing of inputs and outputs, or starting and scanning of timers and counters.
- Elementary and self-defined data types for clear structuring of user programs. Symbols and comments additionally increase the clarity.
- Full-symbol programming and saving of the complete program in a source file.
- Generation of an optimized code with only a little compiler input.
- Display of cross-references

- User program test possible in high-level language (as is the case with the other PLC languages).
- Linking of symbols also in the debugger
- Linking to the project-wide documentation system (DOCPRO)
- Simple selection of library blocks; a corresponding dialog window supports navigation in the library. Following selection of a block, the parameter template of the function is automatically copied into the processed file, and it is only necessary to enter the parameters.
- Automatic formatting of input by indentation; colored identification of keywords for language and comments; the program remains clear and easy to read
- Debugger with "Step into" functionality; improved test resulting from facility to jump to the called blocks during the test.

1) Certification for the Cross Reusability Level of PLCopen available soon.

S7-PLCSIM

The simulation tool for SIMATIC S7-300/400

Introduction

Simulation systems effectively support the development of new products and the productive use of these products, provided the computers exhibit the required performance. In the world of automation, a simulated test environment with associated PLC and process can reduce the duration of the commissioning phase, thus reducing costs.

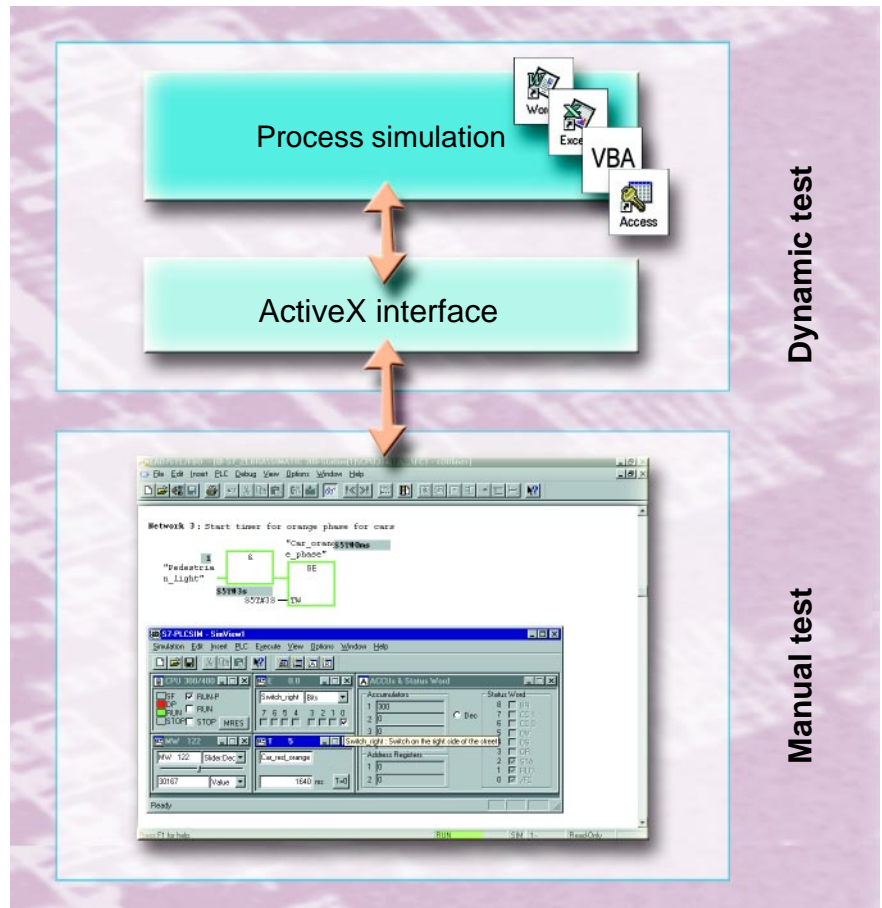
If programming errors are detected early, and if the software is debugged and optimized prior to being loaded in the plant, the programs will show higher quality, and run much smoother.

Simulation systems can also be used to test edited programs prior to the programs being loaded into the PC on-site.

In addition, S7-PLCSIM can assist you when converting from SIMATIC S5 to SIMATIC S7. Existing S5 programs elected for future use in S7 can be tested without an S7 PLC being present. It is then possible to assess whether the programs must be edited, and what the costs will be.

Application

SIMATIC S7-PLCSIM is the simulation system in the world of Totally Integrated Automation®. It is fully integrated in STEP 7 and provides a simulated plant environment. It lets you test user blocks and programs for S7-300® and S7-400® on a programming device or PC – even without existing target hardware, i.e. without CPU, signal modules etc. You can simulate online access operations and use the test functions of the programming tools just as if a CPU were present. The entire program test can be done in the programmer's office.



Dynamic test

Manual test

Fig. 6: S7-PLCSIM offers a user interface for linking to a process simulation

The following programming languages and engineering tools operate in conjunction with S7-PLCSIM:

- LAD, FBD, STL
- S7-GRAPH
- S7-HiGraph
- S7-SCL
- CFC (and SFC)
- S7-PDIAG
- WinCC (installed locally)

Principle of operation

S7-PLCSIM processes the user program like a real CPU. Compared to a real CPU, you can choose between the operating modes "Continuous operation" and "Single step".

While the program is running, it is possible to monitor and edit a number of process variables (e.g. you can turn on or off arbitrary inputs and outputs). S7-PLCSIM additionally provides human-machine interface functions with the built-in STEP 7 variable table (VAT).

Interfacing to process simulation

The S7-ProSim interface lets you hook up an external process simulation system. This interface provides dynamic access to process variables.

S7-ProSim uses ActiveX control and can thus operate with all ActiveX-capable Windows applications, e.g. Visual Basic for Application, or Excel.

IEC 61131-3

Introduction

The purpose of the international standard IEC 61131 is to produce worldwide, future-oriented standardization in the sector of programmable controllers. It has been accepted as the European standard and the German standard DIN EN 61131. It is therefore the successor to various national standards.

Advantages of worldwide standardization

- Savings in software engineering as a result of cross-vendor standardization
- More efficient training
- Portability of application program to devices from different vendors is the long-term goal

The standard IEC 61131-3

Components of IEC 61131

The standard IEC 61131 consists of five different parts:

- General specification of terms and functional features for a PLC
- Electrical, mechanical and functional requirements of a PLC
- Programming languages for a PLC
 - Global PLC programming languages
 - Common language elements and programming rules (multi-language)
- Guidelines for PLC users for many different project phases
- Standard blocks for communication between PLCs from different vendors

Standardized programming languages

- Instruction list (IL)
 - Assembler-based language for programming with optimized memory and runtime requirements
 - Primarily used in Europe
 - Only a small, hardware-independent set of basic commands is standardized

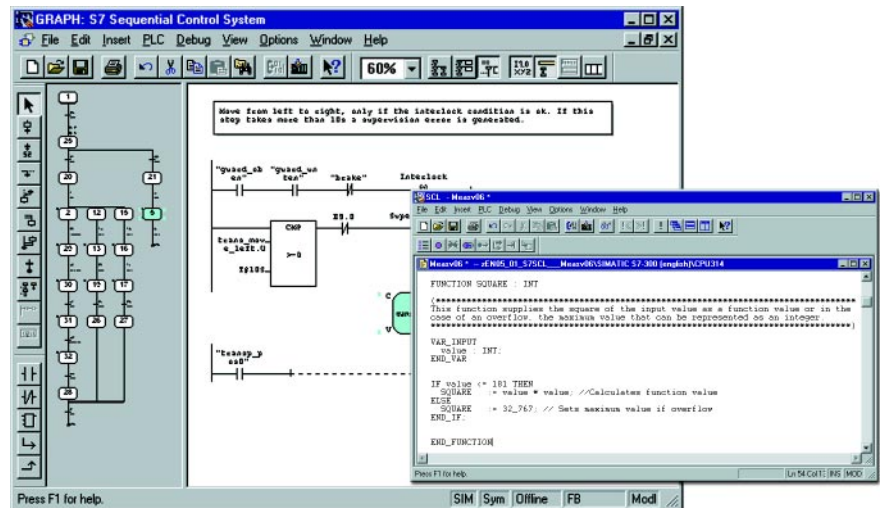


Fig. 7: Sequence language and structured text

- Ladder diagram (LD)
 - Graphic representation corresponding to circuit diagrams
 - Initially developed in the USA as a PLC language
- Function block diagram (FBD)
 - Analog to logic diagrams
 - Used in Europe parallel to STL
- Sequential function chart (SFC)
 - Description of sequence chains in the form of steps and transitions
- Structured text (ST)
 - High-level language for complex calculations and algorithms
 - Based on Pascal with PLC-specific extensions
- Program configuration
 - Graphic and text-based linking of function blocks to generate a program
 - Definition of different sequence levels (tasks)
 - Primarily used so far for process engineering

Common conventions

- Programming and communications model
- Character set and keywords
- Elementary data types (e.g. BOOL, REAL) and combined data types (ARRAY, STRUCTURE)
- Declaration of variables
- Functions
- Function blocks
- Parameter transfer
- Program configuration and tasks

IEC 61131-3 (continued)

Criteria for standardized software

- Documentation of elements generated according to the standard
- Definition of specific limits (e.g. symbol length, number of blocks)
- Features can be implemented which are not part of the standard
- Elements which could be confused with the standard must not be implemented

PLCopen

Organization

On the basis of this standard, various suppliers and users of control and programming systems have joined together in the international organization PLCopen which forces the use and spreading of programming according to IEC 61131.

Siemens is working actively with PLCopen, and has included PLC programming into the IEC 61131 standard.

The long-term goal of PLCopen is the multi-vendor portability of application programs. Further PLCopen working groups are occupied with further components of the IEC 61131 standard (e.g. training or motion control).

Certification of the programming systems from different vendors is an important prerequisite for software portability.

Four different compliance levels have been defined by PLCopen for this purpose:

- Base Level
- Cross Reusability Level
- Portability Level
- Full Compliance Level

Independent institutes assign the respective certificate following the application of test procedures.

STEP 7 – conforms with IEC 61131-3 and is compatible with STEP 5

In the context of SIMATIC industrial software, STEP 7 and the associated engineering tools provide programming software for SIMATIC S7 which is largely in conformance with the standard. In STEP 7, the programming languages have been extended at various points in accordance with the standard to offer users optimum programming convenience and full utilization of the S7 controllers.

Furthermore, compatibility with STEP 5 was of greater importance at certain points than compatibility with the standard (especially in STL).

The following table contains the most important information on compliance with the standard. Points where STEP 7 deviates from the standard, exhibiting a separate face, are explained in detail.

Exact information on compliance with the standard is included in tabular form in a file which is part of the STEP 7 product.

LAD, S7-GRAPH, S7-SCL and CFC	STL	Full Compliance Level
<ul style="list-style-type: none"> ▪ LAD conforms with LD ▪ S7-GRAPH conforms with SFC ▪ S7-SCL conforms with ST (certified according to PLCopen Base Level¹⁾) ▪ CFC conforms with graphic program configuration 	<ul style="list-style-type: none"> ▪ Command syntax deviates occasionally from IL; priority was compatibility with STEP 5. As a result of the increasing program complexity, the significance of STL in the future will be reduced in favor of higher-level programming languages. ▪ Functionality of standard commands present ▪ Basic command set of standard extended by machine-dependent commands (to utilize all application facilities provided by the S7 controllers) 	Tasks
		Deviation from standard because of compatibility with STEP 5: mapping of tasks on the organization blocks known from S5
		Absolute addresses
		Deviation from standard because of compatibility with STEP 5: absolute addresses without identifier. Inputs according to the standard are accepted (initial character %), but converted in STEP 7 (no identifier). S7-SCL permits uniform use of absolute addresses complying with the standards.
		Symbols
		Symbolic addressing is possible with S7-SCL, CFC and in the source mode of STL. This is planned for LAD and FBD. In addition, direct decompilation of the application program from the machine code is possible for LAD, FBD and in the incremental mode of STL. For this reason, programs are generated here with absolute addresses (e.g. I1.1) where symbols can be superimposed for better readability.

1) PLCopen Cross Reusability Level available soon

Further software tools

In addition to the functions included in STEP 7 Professional, further powerful software tools are available with tailored functions to permit programming of automation solutions to be as convenient and simple as possible:

- **Engineering tools:**
Task-oriented tools for convenient configuring and programming just as you wish
- **Runtime software:**
Completely programmed solutions which can be called from the application program
- **Human-machine interface:**
Operator control and visualization software especially for SIMATIC

Engineering tools

- **S7-HiGraph;**
to describe asynchronous processors using status graphs. This representation provides comprehensive flexibility, and can also be understood by machine builders (technologists), commissioning engineers and servicing engineers
- **CFC (continuous function chart);**
for generation of automation applications using a technology plan. Ready-to-use blocks are available in a library, and new blocks can be programmed in addition
- **S7-PDIAG;**
for configuring of process diagnostics for SIMATIC S7. Increases the availability of machines and production plants, and supports local fault analysis and troubleshooting
- **TeleService;**
for remote maintenance of SIMATIC S7/C7/WinAC automation systems using a programming device or PC by means of standard or radio network. The known STEP 7 functionality and the engineering tools are available to the user, comparable with a local MPI connection

- **DOCPRO;**
for production and administration of plant documentation. DOCPRO permits configuring of project data, processing in the form of circuit manuals, and printout in a uniform display

Runtime software

- **Standard PID control;**
for integration of continuous PID controllers, pulse controllers and step controllers into the application program
- **Modular PID control;**
preferably for use with closed-loop control applications in the medium and upper performance ranges and for process engineering. Almost any control structure can be implemented by linking the supplied standard function blocks
- **PID self tuner;**
for extension of existing PID controllers into self-tuning PI or PID controllers. Ideal for use with temperature controls, also suitable for level and flow controls
- **Fuzzy control++;**
to generate fuzzy systems for SIMATIC S7 and SIMATIC WinCC. Fuzzy systems are used where processes cannot be described mathematically, or only with great difficulty, where sequences and processes are unpredictable, where non-linearities occur, but where knowledge of the process is present
- **NeuroSystems;**
for generation of neural networks. Neural networks are able to learn, and can also simulate a special response from a collection of data. It is then possible to simulate typical process sequences, or to recognize specific properties in measured values

- **Software redundancy;**
software package for design of fault-tolerant controls on a software basis. Can be used for applications with low switching speed requirements, e.g. control of water power plants, cooling circuits, traffic flows, level control, data acquisition
- **PRODAVE MPI;**
the toolbox for transfer of process data between SIMATIC S7, SIMATIC C7 and a programming device or PC. For automatic handling of data transfer using MPI/PPi

Human-machine interface

- **SIMATIC WinCC;**
the PC-based operator control and visualization system. The basic configuration already includes industrial functions for signalling events, archiving measured values, logging all process and configuration data
- **SIMATIC ProTool/ProTool Lite;**
uniform configuring software for all SIMATIC panels and the HMI component of SIMATIC C7
- **SIMATIC ProAgent;**
specific, fast diagnostics of process faults in plants and machines for SIMATIC S7 and SIMATIC HMI
- **SIMATIC ProTool/Pro;**
PC-based operator control and visualization solution for the machine environment, comprising the SIMATIC ProTool/Pro RT runtime software for PC-based systems and the SIMATIC ProTool/Pro Configuration (CS) configuration software.

Software update service



What does the software update service provide?

SIMATIC industrial software is continuously being developed and improved. The software update service is the simplest way to make the most of these improvements. It guarantees that you will be automatically sent all new software versions released after you order the software update service. This means that your software is always in tune with the latest technologies.

You only need to order the software update service once, it will then be automatically extended by a year at a time. This saves logistics costs. Investments into new software can be taken into consideration at an early stage when planning your budget, and can be written off more easily.

Even if you only get one delivery a year, the software update service is better value than ordering a single upgrade.

What is supplied?

- All new software versions released after you order the software update service (usually several deliveries per year).
- SIMATIC Customer Support Knowledge Base CD-ROM, complete with FAQs, tips & tricks and downloads (3 x per year).

How do you order the software update service?

- The software update service is simply ordered like any other product.
- You must have a current software version.
- One software update service is ordered for each software license installed.
- The software update service is valid for one year after the order date
- It is automatically extended by a year at a time unless notice is given three months before it is due to expire.
- An annual fee is charged for each licence.

The software update service is available for the following products:

- Configuration and program development
 - STEP 7 Mini
 - STEP 7
 - S7-SCL high-level PLC language
 - S7-GRAPH sequences
 - STEP 7 Professional
 - S7-HiGraph status graphs
 - CFC technology plan
- Testing, maintenance and diagnostics
 - DOCPRO for producing system documentation
 - S7-PDIAG process diagnostics
 - S7-PLCSIM simulation software
 - TeleService
- Runtime software
 - Modular PID control
 - Standard PID control
 - PRODAVE MPI for SIMATIC S7, for Windows 95/98/NT
- Human-machine interface
 - SIMATIC ProTool/Lite®
 - SIMATIC ProTool
 - SIMATIC ProTool/Pro®
 - SIMATIC WinCC
- Industrial communications
 - SIMATIC NET software

Technical support

Customer support

You can find tips & tricks, FAQs, downloads such as free updates and example programs, electronic manuals and current product information under Customer Support on the Internet at www.ad.siemens.de/support

You can subscribe to a newsletter for up-to-date information: www.ad.siemens.de/newsletter

Please address technical inquiries by e-mail to the address: TechSupport@ad.siemens.de

Please provide as detailed a description as possible when submitting written inquiries, together with your name and telephone number so that we can reach you if we have questions.

You can find detailed information on our services on the Internet at: www.ad.siemens.de/service

You require help, but are not sure who you should contact? Then simply call our Helpline. We are available 24 hours a day, 365 days a year for your inquiries in German or English:

+49 (0) 0180 / 50 50 111

We will ensure that you will be contacted by the right specialist close to you as soon as possible.

You can obtain support in German or English on the use of our products, systems and solutions for automation and drives if you call our Technical Support:

+49 (0) 0180 / 50 50 222

Here you will be talking to competent, permanently trained and experienced specialists. With our networked locations in Germany, the USA and Asia we can offer this support round-the-clock according to the follow-the-sun principle.

Important addresses and telephone numbers at a glance

Helpline	+49 (0) 0180 / 50 50 111
Technical support	+49 (0) 0180 / 50 50 222
Internet: SIMATIC Customer support Current information Service	www.ad.siemens.de/simatic www.ad.siemens.de/support www.ad.siemens.de/newsletter www.ad.siemens.de/service
E-mail	simatic.marketing@nbgm.siemens.de TechSupport@ad.siemens.de



You can find further information on this product on the Internet at the address

www.ad.siemens.de/simatic-software

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