

## S7-PLCPR0G2 – Workshop on development, service and commissioning of programs for Simatic S7 controllers. Level 2 — operating by data of difficult structure / К у р с S7-PLCProg2 (S7-PLCPR02)

### Short Description

The course S7-PLCProg-2 is a workshop on development, service and commissioning of the software for systems of automation of production and management on the basis of S7-300/400 or S7-1200/1500 controllers with use of the Step 7 5.5, PCS7 or TIA-Portal environment. This training allows to gain skills of understanding and development of programs for problems of operating by the difficult and structured data in the S7-SCL and S7-STL languages.

### Objectives

- Acquisition of skill according to the solution of problems of operating by difficult structured data in control systems
- Profound studying of methods of programming in the S7-SCL language

### Content

- Subjects for repetition (At the choice of trainee)
  - Types of data in Simatic S7 controllers
  - Syntax, main teams and designs of the S7-STL language
  - Logical operations, Operations with numbers, Designs of branching and cycle, Indirect addressing
  - Editor of the S7-SCL language, debugging of the program and setup of the compiler
  - The other subjects concerning syntax of the STL and SCL languages, editors of programs and the compiler postorenniy which it is necessary for transition to practical programming
- Subjects of lectures
  - Structural types of data in Simatic S7 controllers
  - Tasks and algorithms of operating by difficult structured data in control systems
  - Work with parameters of difficult type in the STL and SCL languages
  - Work with types of data of POINTER and ANY

### Prerequisites

Knowledge and practical skills in volume of initial courses on programming and service of Simatic S7 controllers are necessary for successful completion of the training of S7-PLCProg-2: ST7-SYH+ST7-STOE or ST7-SERV1+ST7-SERV2 or ST7-PRO1 or ST7-PRG1 or TIA-1200 or TIA-SERV1+TIA-SERV2 or TIA-PRO1. Each participant of training independently solves – what practice of application from programming languages: S7-SCL or S7-STL, it is necessary to pay more attention. For deeper development of methods of management of difficult data before a practical work it is recommended to be held one of the courses ST7-SERV3, ST7-PRSERV, ST7-PRO2, ST7-PRG2 or TIA-PRO2 in the S7-STL language. For deeper development of methods of management of difficult data before a practical work it is recommended to be held one of the courses ST7-SCL or TIA-SCL in the S7-SCL language.

### Note

- Examples of practical tasks:
    - Development of functions of work with massifs: buffering, search, calculation statistician, sorting.
    - Development of functionality for maintaining magazines in Simatic S7 controllers.
    - Development of functions of management of difficult structured recipes in Simatic S7 controllers.
    - Development of functionality for compensation of uneven loading of a tape of the conveyor.
    - Development of functions of buffering of data for maintaining fast archives of tags in WinCC (SCADA).
- Each participant of training independently chooses a platform for performance of exercises: TIA-Portal or Step 7 v5.5. The programmer is provided to everyone for performance of exercises. The interactive program models of systems supplied with evident visualization and conveyor model act as objects of automation in exercises. Existence of a number of models does exercises more interesting and allows to select problems of suitable complexity and subject. The solution of such tasks allows to master more effectively methods of development and service of the software for real control systems, and also to fix skills of application of the main functionality of a programmer.

### Type

Face-to-face training

### Duration

4 days

### Language

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