

## On line-Training SIMATIC S7-1500 Programmazione 1 in TIA Portal (TIA-PRO1)

### Short Description

The Totally Integrated Automation Portal (TIA Portal) forms the work environment for integrated engineering with SIMATIC STEP 7 and SIMATIC WinCC. In this first part of the SIMATIC TIA Portal programming training, we teach you the handling of the TIA Portal, basic knowledge about the structure of the SIMATIC S7 automation system, configuration and parameterization of hardware, and the basics of standard PLC programming. You also receive an overview of SIMATIC HMI, PROFINET IO, and connecting drives SINAMICS.

### Objectives

After attending the course, you can do the following:

- Understand the fundamentals of interaction of the TIA components
- Solve simple programming tasks using elementary STEP 7 (TIA Portal) instructions
- Reliably operate the TIA Portal engineering platform
- Program simple plant functions with basic STEP 7 (TIA Portal) instructions in the ladder diagram (LAD/KOP) or function block diagram (FBD/FUP)
- Perform simple commissioning of TIA components

### Target Group

Programmers  
Commissioning engineers  
Engineering personnel

### Content

- Overview and significant performance characteristics of the SIMATIC S7 system family
  - The components of the TIA Portal: SIMATIC STEP 7, SIMATIC WinCC, SINAMICS Startdrive
  - Program execution in automation systems
  - STEP 7 block types and program structuring
  - Binary and digital operations in the function block (FBD/FUP) and ladder diagram (LAD/KOP)
  - Programming of parameterizable blocks
  - Data management with data blocks
  - Programming organization blocks
  - Test tools for system information, troubleshooting, and diagnostics
  - Hardware configuration and parameterization of the SIMATIC S7 modules, a PROFINET IO system (ET200), a SIMATIC HMI and a drive SINAMICS
  - Program Cycle, Process Image and Process Image Partition
  - Explanation and using different organization blocks
  - Startup of a drive (SINAMICS G120) and communication with standard telegram 1
- Deeper understanding of contents through practical exercises on the SIMATIC S7-1500 system model  
Theoretical knowledge will be deepened with numerous practical exercises on a TIA system model. This consists of a SIMATIC S7-1500 automation system, a SIMATIC ET 200 distributed I/O, a SIMATIC WinCC Advanced operator control, a SINAMICS G120 drive and a conveyor model.

### Prerequisites

SEP course or equivalent basic knowledge of automation systems.

### Note

This course is also available in Virtual Classroom mode: E-1500P1.

At the end of the course you can deepen the topics covered through our **SIE-learning 4.0**: SIE-TMENG, SIE-MIG, SIE-PNBA, SIE-PNDIAG. In this course, the SIMATIC S7-1500 automation system and the SIMATIC STEP 7 (TIA Portal) software are used; MICRO1 and MICRO2 courses are available for the SIMATIC S7-1200 automation system.

### Type

Online-Training

### Duration

30 hours

### Language

it