

## SIMATIC Programming 2 in the TIA Portal (TIA-PRO2)

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### Short Description

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The Totally Integrated Automation Portal (TIA Portal) forms the work environment for integrated engineering with SIMATIC STEP 7 and SIMATIC WinCC. The second part of the SIMATIC TIA Portal programming training is based on the knowledge of the TIA Portal gained in the SIMATIC S7 TIA Portal programming 1 course, including STEP 7, SIMATIC S7, HMI, connection of drives, and PROFINET IO. You will expand your knowledge of complex operations and you get an introduction in the programming language statement lists (STL), Structured Control Language (SCL) and S7-GRAPH. Along with analog value processing and data administration with complex data types, the evaluation and handling of program-related errors are also considered. Building on this, you will learn how to display messages on the operator control and monitoring system (HMI). Thanks to the knowledge imparted, you will gain new impetus and ideas for efficient PLC programming.

### Objectives

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After attending the course, you can do the following:

Understand the interaction of TIA components

- Apply classical program development methods
- Solve comprehensive programming tasks
- Program advanced functions such as indirect addressing in STEP 7
- Implement data administration with the SIMATIC S7 automation system
- Apply system blocks along with blocks from the standard STEP 7 library
- Program classical software error handling and evaluation
- Configure alarms of the operator control and monitoring system (HMI)
- Configure TIA system components consisting of SIMATIC S7, HMI, PROFINET IO, and drive

You can deepen your theoretical knowledge with numerous practical exercises on a TIA system model. This consists of a SIMATIC S7 automation system, ET200 distributed I/O, Touchpanel, drive, and a belt model.

### Target Group

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Programmers  
Commissioning engineers  
Engineering personnel

### Content

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Tools for program creation (e.g. structograms)

Analog value processing

Functions, function blocks, and multi-instances using the IEC-compliant timer/counter as an example (International Electro technical Commission)

Jump commands and battery operations

Indirect addressing

Classical software error handling and evaluation with error organization blocks (OBs)

Evaluation of diagnostic data

Troubleshooting and alarms with an HMI device (Touchpanel)

Introduction into Structured Control Language (SCL) and S7-GRAPH

Deeper understanding of contents through practical exercises on SIMATIC S7-1500 system model

### Prerequisites

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SIMATIC S7 knowledge corresponding to TIA-PRO1 and practical experience in using the knowledge

You can use the available online entry test to ensure that the selected course matches your area of expertise.

- [Online Assessment Test](#)

### Note

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In this course you will work with SIMATIC S7-1500 and software SIMATIC STEP 7 based on TIA Portal.

This is the second of three courses that prepare you for certification as a "Siemens Certified Programmer, based on the TIA Portal". The examination is a "SITRAIN Certification Program" module.

### Type

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Face-to-face training

### Duration

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4.5 days

### Language

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