SIEMENS

On line-Training SIMATIC Service 3 in TIA Portal (TIA-SERV3)

Short Description

The Totally Integrated Automation Portal (TIA Portal) forms the work environment for integrated engineering with SIMATIC STEP 7 and SIMATIC WinCC. The third part of the SIMATIC S7-1500 service training is based on the knowledge of the TIA Portal gained in the SIMATIC S7-1500 Service courses 1 and 2, including SIMATIC STEP 7, SIMATIC HMI and PROFINET IO. You will expand your knowledge in terms of program troubleshooting and error handling and learn how to display these errors in an operator control and monitoring system. A SIMATIC HMI will be connected to the realtime process communication. You will set up communication between SIMATIC CPUs (based on Industrial Ethernet) to send process data and status information. You will work with Technology Objects e.g. Motion Control Functions. The basis for this is to also interpret and expand existing programs in the programming languages Ladder Diagram(LAD/KOP) / Function Block Diargram (FBD/FUP), Structured Control Language (SCL) and Structur Text Language (STL/AWL). Thanks to this comprehensive understanding, you gain new impetus and ideas to optimize your plant and can thus reduce or eliminate downtime in your entire plant.

Objectives

After attending the course, you can do the following:
- Understand the interaction of TIA components
- Interpret, adapt, and expand specified, complex STEP 7 (TIA Portal) programs including data administration and system function blocks
- Systematically diagnose and fix hardware and software errors in a complex TIA system consisting of SIMATIC S7, SIMATIC HMI, PROFINET IO and drive SINAMICS by means of the diagnostic tools of the TIA Portal engineering platform.
- Read out SIMATIC S7 system diagnostic information using a STEP 7 (TIA Portal) program and display it on a SIMATIC HMI unit
- Establish CPU-CPU communication via Industrial Ethernet

Target Group

Maintenance personnel
Service personnel

Content

- Commissioning a TIA system with software troubleshooting and debugging
- Uses for error organization blocks
- Reading out, evaluating, and display of diagnostic messages
- Diagnosis of errors in a PROFINET IO system with a SIMATIC HMI device
- Diagnosis of SIMATIC S7 system errors with a SIMATIC HMI device
- Configuration of CPU – CPU communication via Industrial Ethernet
- Working with Ladder Diagram(LAD/KOP), Function Block Diargram (FBD/FUP), Structured Control Language (SCL) and Structur Text Language (STL/AWL)
- Working with Technology Objects

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

S71500S2 course or equivalent knowledge of automation systems.

Note

At the end of the course you can deepen the topics covered through our **SIE-learning 4.0**: SIE-PNADV, 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