

## SIMATIC service 3 in the TIA Portal (TIA-SERV3)

### Kurzbeschreibung

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

### Ziele

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 TIA Portal service training is based on the knowledge of the TIA Portal gained in the SIMATIC S7 TIA Portal service courses 1 and 2, including SIMATIC STEP 7, 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 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) / Function BlockDiagram (FBD), Structured Control Language (SCL) and Structur Text Language (STL).

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.

After attending the course, you can do the following:

- Understand the interaction of TIA components
- Interpret, adapt, and expand specified, complex STEP 7 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, HMI, PROFINET IO and drive by means of the diagnostic tools of the TIA Portal engineering platform.
- Read out SIMATIC S7 system diagnostic information using a STEP 7 program and display it on an HMI unit
- Establish CPU – CPU communication via Industrial Ethernet
- Deeper understanding of contents through practical exercises on the SIMATIC S7-1500 and SIMATIC S7-1200 system model

### Zielgruppe

Maintenance personnel  
Service personnel

### Inhalte

Commissioning a TIA system with software troubleshooting and debugging

Error analysis and handling per SIMATIC STEP 7 program:

- Possible uses for error organization blocks
  - Reading out, evaluating, and display of diagnostic messages
- Diagnosis of errors in a PROFINET IO system with an HMI device

Diagnosis of SIMATIC S7 system errors with an HMI device

Configuration of CPU – CPU communication via Industrial Ethernet

Working with Ladder Diagram(LAD) / Function BlockDiagram (FBD), Structured Control Language (SCL) and Structur Text Language (STL).

Working with Technology Objects

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

### Teilnahmevoraussetzung

SIMATIC S7 knowledge corresponding to TIA-SERV2 or TIA-SYSUP 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.

This blended learning course combines web-based training (WBT) on the Internet with a 5-day attendance course. To prepare for the attendance course, you will receive the WBT "Industrial Ethernet". This allows you to improve your personal learning achievement in the attendance course.

### Hinweise

In this course you will work with the SIMATIC STEP 7 software based on TIA Portal.

This is the third of three to prepare you for certification as a "Siemens Certified Service Technician Level 2, based on the TIA Portal". Both tests are modules of the "SITRAIN Certification Program".

The examination is a "SITRAIN Certification Program" module.

[CPT-FAST2](#)

### Typ

Präsenztraining

### Dauer

5 Tage

**Sprache**

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