



SIEMENS Certified Integrated Engineering Technician

(TIA-SERV1) – 5 Days

Course Contents

Requirements

This first level service course teaches the basic S7 system concept, hardware configuration and parameterization, S7 software (SIMATIC TIA Portal) basics, and an overview of programming fundamentals. Human Machine Interface (HMI) and PROFINET IO basics are also included.

Numerous hands-on exercises using a Totally Integrated Automation (TIA) plant model reinforce practical experience and theoretical knowledge. The TIA plant model consists of an S7-300 automation system, ET200S distributed I/O, SIMATIC Touch Panel, and a conveyor model.

Objectives

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 service 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 programming. You also receive an overview of HMI, PROFINET IO / PROFIBUS, and connecting drives. You will learn to diagnose and clear simple hardware faults and software errors.

Topics

Upon completion of this course, the participant shall be able to:

- Understand the fundamentals of interaction of the TIA components
- Reliably operate the "TIA Portal" engineering platform
- Understand, change, and expand small STEP 7 programs
- Configure, parameterize, and exchange SIMATIC S7 modules
- Diagnose and fix simple hardware faults using the wiring test
- Diagnose and fix simple program errors using the status block
- Perform simple commissioning of TIA components

Course Certificate

Certificate of participation will be awarded after the training.



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Course Outline

The major topics to be covered are:

- Overview and significant performance characteristics of the SIMATIC S7 system family
- The components of the TIA Portal: STEP 7, WinCC, communication
- Program execution in automation systems
- Binary and digital operations
- Setup and assembly of the automation system
- Addressing and wiring the signal modules
- Hardware and software commissioning of the SIMATIC S7 automation system with the TIA Portal
- SIMATIC S7 hardware configuration and parameterization
- Presentation of a Touchpanel
- Presentation of the drive
- Setup and parameterization of PROFINET IO system (ET-200S), a Touch Panel (TP 177 B)
- Saving and documentation of the implemented program changes with the TIA Portal
- Deeper understanding of contents through practical exercises on TIA system model



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Time-wise Schedule

Day	Time	Topics
Day – 1	09:00 Hrs – 09:20 Hrs 09:20 Hrs – 10:00 Hrs 10:15 Hrs – 12:00 Hrs 13:00 Hrs – 15:00 Hrs 15:15 Hrs – 17:00 Hrs	SIMATIC S7 System Family overview Engineering Software “TIA Portal” Installation/Maintenance of PLC Devise and Network Practical on the above
Day – 2	09:00 Hrs – 10:00 Hrs 10:15 Hrs – 12:00 Hrs 13:00 Hrs – 15:00 Hrs 15:15 Hrs – 17:00 Hrs	SIMATIC Manager Symbols Hardware Configuration Practical on the above
Day – 3	09:00 Hrs – 10:00 Hrs 10:15 Hrs – 12:00 Hrs 13:00 Hrs – 15:00 Hrs 15:15 Hrs – 17:00 Hrs	Hardware Commissioning Program Blocks Binary Operations Practical on the above
Day – 4	09:00 Hrs – 10:00 Hrs 10:15 Hrs – 12:00 Hrs 13:00 Hrs – 15:00 Hrs 15:15 Hrs – 17:00 Hrs	Digital Operations Introduction to Distributed I/O Introduction to HMI Practical on the above
Day – 5	09:00 Hrs – 10:00 Hrs 10:15 Hrs – 12:00 Hrs 12:00 Hrs – 15:00 Hrs	Documentation Practical on the above Feedback & Valedictory session

Break Timings:

10:00 Hrs – 10:15 Hrs	Morning Tea Break
12:00 Hrs – 13:00 Hrs	Lunch Break
15:00 Hrs – 15:15 Hrs	Afternoon Tea Break
17:00 Hrs – 17:15 Hrs	Recess & End of Day