

# **SIMATIC S7-1500 with TIA Portal Advance Training**

*COURSE CONTENT*

## **GET IN TOUCH**



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## About Multisoft

Train yourself with the best and develop valuable in-demand skills with Multisoft Systems. A leading certification training provider, Multisoft collaborates with top technologies to bring world-class one-on-one and certification trainings. With the goal to empower professionals and business across the globe, we offer more than 1500 training courses, which are delivered by Multisoft's global subject matter experts. We offer tailored corporate training; project Based Training, comprehensive learning solution with lifetime e-learning access, after training support and globally recognized training certificates.

## About Course

The SIMATIC S7-1500 with TIA Portal Advanced Training by Multisoft Systems is designed for professionals who want to deepen their knowledge of Siemens' most powerful and advanced automation systems. This program focuses on the S7-1500 PLC and TIA (Totally Integrated Automation) Portal, combining theory with practical exercises to build strong hands-on expertise.

## Module 1: Hardware

- ✓ System overview of SIMATIC controller families
- ✓ SIMATIC S7-1500 family in detail
- ✓ Hardware configuration of S7-1500 controller in TIA

## Module 2: TIA portal

- ✓ TIA portal products and scope
- ✓ Automation planning - TIA selection tool and configuration using AML files
- ✓ License management for TIA
- ✓ Overview of framework
- ✓ PLM integration with TIA Portal – explanation

## Module 3: Software and advance programming concepts

- ✓ Effective programming using function and function blocks
- ✓ Multiple and parameter instance programming
- ✓ Working with Data Blocks (DB)
- ✓ Snapshot and download without reinitialization in DB
- ✓ Standardization in programming as a basis for enabling digitalization
- ✓ Working with complex data types
- ✓ Programming of Real Time Clock (RTC), jump instructions
- ✓ Concept of Organization blocks
- ✓ Introduction to indirect addressing
- ✓ Compact PID controller configuration using Technology Object (TO)
- ✓ SIMATIC security services for machine and plant security
- ✓ TIA portal options for efficient engineering: overview of Openness
- ✓ Multi-user team engineering - Collaborative working with teams in TIA
- ✓ Integrated energy management in TIA portal – Energy Suite

## Module 4: Communication

- ✓ Integrated engg. of kinematics: SINAMICS G120 drive integration with S7-1500 using Motion Control - explanation and demo only
- ✓ S7-1500 controller with remote station on Profinet (PN)/Profibus DP protocol - Explanation and demo only
- ✓ S7-1500 controller with HMI panel
- ✓ Introduction to cloud connectivity using S7-1500 – explanation

## Module 5: Troubleshooting and diagnostic topics

- ✓ Significance of LED indication on different modules
- ✓ Diagnosis using diagnostic buffer
- ✓ Cross-references, call structure, assignment list, dependency structure
- ✓ Memory resource allotment
- ✓ Memory overlap identification
- ✓ Trace configuration tool
- ✓ Project backup and comparison
- ✓ Forcing, renaming, and rewiring concepts
- ✓ Remote diagnostics using web server with user defined webpages
- ✓ Fault tracing using PRODiag