

SIMATIC S7-1500 with TIA Portal Basic Training

COURSE CONTENT

GET IN TOUCH



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About Multisoft

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About Course

The SIMATIC S7-1500 with TIA Portal Basic Training by Multisoft Systems is designed to provide participants with a strong foundation in Siemens automation systems. This training focuses on the S7-1500 programmable logic controller (PLC) and the TIA (Totally Integrated Automation) Portal, which is Siemens' integrated engineering framework for programming, configuration, and automation tasks.

Module 1: Hardware

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

Module 2: TIA portal

- ✓ TIA portal products and scope
- ✓ Digitalization in planning phase: TIA selection tool
- ✓ License management for TIA
- ✓ Overview of framework
- ✓ PLM integration with TIA Portal – explanation

Module 3: Software and Programming concepts

- ✓ Working with PLC tags
- ✓ Bit logic instructions
- ✓ Concept of RLO
- ✓ Programming rules
- ✓ Elementary data types
- ✓ Standardization in programming as a basis for enabling digitalization
- ✓ Arithmetic and logic operations
- ✓ Working with watch tables
- ✓ Analog value processing
- ✓ Linear v/s structured programming approach
- ✓ Effective programming using function and function blocks
- ✓ Use and need of data blocks
- ✓ Types of data blocks
- ✓ Snapshot and download without reinitialization in DB
- ✓ Concept of Organization blocks

- ✓ SIMATIC security services for machine and plant security

Module 4: Communication - Explanation and demo only

- ✓ SINAMICS G120 drive integration with S7-1500 controller on Profinet (PN)/Profibus DP protocol
- ✓ S7-1500 controller with remote station on Profinet (PN)/Profibus DP protocol
- ✓ Introduction to cloud connectivity using S7-1500 – explanation*new

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
- ✓ Forcing, renaming, and rewiring concepts
- ✓ Project comparison
- ✓ Remote diagnostics using web server with user defined webpages