

## SIMATIC S7-1200 with TIA Portal (AS-1200)

### Objectives

To make participants aware and familiar with:

- SIMATIC S7-1200 automation system
- TIA portal V16 as engineering framework
- Basic programming concepts in TIA Portal
- Digitalization topics in TIA Portal along with use cases

### Target Group

- Service engineers
- Programmers
- Commissioning engineers

### Content

#### Hardware

- System overview of SIMATIC controller families
- SIMATIC S7-1200 family in detail
- Hardware configuration of S7-1200 controller in TIA Portal STEP7
- S7-1200 module spectrum

#### TIA Portal

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

#### 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* **New\***
- 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
- Concept of Organization blocks
- *SIMATIC security services for machine and plant security* **New\***

#### Communication

- SINAMICS G120 drive integration with S7-1200 controller on Profinet(PN)/Profibus DP protocol
- S7-1200 controller with remote station on Profinet(PN)/Profibus DP protocol
- *Introduction to cloud connectivity using S7-1200 – explanation* **New\***

#### 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* **New\***

**HANDS-ON**

- Application example-based exercises after each topic

**Prerequisites**

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- Basic know how about automation technology is must
- Basic knowledge of electrical technology and digital electronics is essential

**Note**

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**SOFTWARE VERSION: STEP7 Basic TIA Portal v16****SYSTEM REQUIREMENT**

- SIMATIC S7-1200 training kit
- Laptop or computer system with following configuration (recommended), with SIMATIC STEP 7 Basic/Professional with TIA Portal v16 installed:

**Hardware - Software Requirement**

Processor Intel® Core™ i5-6440EQ (up to 3.4 GHz)

RAM 16 GB (min. 8 GB, 32 GB for large projects)

Hard disk SSD with 50 GB free storage space

Network 1 Gbit (for multi-user)

Monitor 15.6" full HD display (1920 x 1080 or more)

Operating system Windows 7 (64-bit), Windows 10 (64-bit), Windows Server (64 bit)

**Type**

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Face-to-face training

**Duration**

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5 days

**Language**

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**Fee**

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27,500 INR