

SCADA in Action: From Architecture to Applications

Course Duration: 40 Hours (5 Days)

Overview

The "SCADA in Action: From Architecture to Applications" course is a comprehensive training program focused on the principles, architecture, and practical applications of SCADA (Supervisory Control and Data Acquisition) systems. The course is designed to provide learners with a solid understanding of how SCADA systems operate and how to configure and use them effectively within various industries. Starting with an introduction to SCADA, the course covers key concepts such as Data acquisition and communication, Presenting and visualizing data, and the differences between PLCs and PCs. It then progresses through hands-on exercises in Project creation, Basic configuration, Alarm management, Data logging, Trend configuration, Recipe management, and User administration, all using Siemens WinCC SCADA. By the end of the course, participants will have gained valuable WinCC SCADA training experience, enabling them to design, implement, and maintain SCADA systems, ensuring efficient industrial operations and data management.

Audience Profile

The SCADA in Action course equips professionals with essential skills in SCADA system operations, covering topics from architecture to applications.

- Automation Engineers
- Control Systems Engineers
- Instrumentation Engineers
- Industrial Software Developers
- Electrical Engineers specializing in control systems
- Process Control Technicians
- Maintenance Technicians working with SCADA systems
- Industrial Network Specialists
- System Integrators
- Operations Managers in manufacturing or utilities
- Plant Managers overseeing SCADA systems
- IT Professionals specializing in Industrial Cybersecurity
- Project Managers involved in industrial control projects
- Technical Consultants in the field of industrial automation
- Professionals transitioning into industrial automation roles
- Technical Support Specialists for SCADA systems
- Students pursuing a career in industrial automation or control systems

Course Syllabus

Module 1: Introduction to SCADA

- SCADA Overview
- What is SCADA?

- Functions of SCADA
- Example of SCADA Architecture
- Data Acquisition and Communication
- Data Acquisition Methods
- Data Communication in SCADA Systems
- Data Presentation and Visualization
- Comparison of PLC and PC
- Examples of SCADA Applications

Module 2: Project Creation & Basic Exercises

- Creating a SCADA Project
- Adding Devices to the Project
- Establishing Communication Connections
- Setting Ethernet Addresses
- Connecting to Non-Integrated PLCs
- Runtime Settings Configuration
- Configuring Buttons and Outputs
- Basic Exercises Related to Push Buttons and Displays

Module 3: Basic Configuration

- Configuring Graphic Views
- Setting Up Text Displays
- Alphanumeric Display for Inputs and Outputs
- Configuring Text and Graphic Lists
- Movement and Fill Properties

Module 4: Alarm Configuration

- Steps in Alarm Configuration
- Message Blocks for Alarms
- Alarm Classes
- Discrete Alarm Trigger Settings
- Displaying Alarms
- Alarm View Properties
- Practical Exercises on Alarm Configuration

Module 5: Data Logging & Trend Configuration

- Types of Process Value Logging
- Configuring Data Logs
- Process Value Log Properties
- Editing Logging Tags
- Displaying Data Log Trend Views
- Properties of Trend Views

- Practical Exercises on Data Logging and Trend Configuration

Module 6: Recipe Management

- Recipe Structure
- Communication with Controllers Using Tags
- Table Representation of WinCC Recipe View
- Sorting in the Recipe View
- Exporting Recipe Data
- Configuring Recipe Views
- Entering and Editing Recipe Data
- Recipe Editor Configuration
- Setting Recipe Properties
- Practical Exercises on Recipe Management

Module 7: User Administration

- User Administration Structure
- Access Protection Mechanisms
- Configuring User Administration
- Structuring User Authorizations
- Creating Authorizations
- Assigning Authorizations to Objects
- Configuring User Groups
- Configuring Users
- User View Configuration
- Login Dialog Configuration
- Displaying Logged-On Usernames
- Practical Exercises on User Administration