

**INDUSTRIAL AUTOMATION**  
**Supervisory Control & Data Acquisition**  
**(36h)**

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**Who should attend:**

Technicians, Supervisors, Engineers and Designers, who are involved in the design/operation of PLC, HMI & SCADA in industrial automation.

**Prerequisite:**

At least some programming and design skills for programmable logic controllers.

**How will benefit:**

This 36-hour training program provides participants with hands-on experience in the troubleshooting, maintenance & programming of the SIEMENS family of tools. Hardware and software troubleshooting techniques are heavily emphasized throughout the course.

- ✓ Complete understanding of PLC, HMI & SCADA based Hardware & Software tools for new development & system alteration
- ✓ Downtime reduction in case of emergency problems
- ✓ Complete Understanding of the Plant Operation
- ✓ Prepared hands on for fault removal and maintenance tasks & many more

**Objective:**

Hands on application course focuses on the design/operation level of SCADA using WINCC.

**Contents:**

Main Topics covered during training sessions.

**Section A**

- ✓ Background to SCADA
- ✓ SCADA systems, hardware and firmware
- ✓ Comparison of the terms SCADA, DCS, PLC and smart instrument

**Section B**

- ✓ Remote terminal units
- ✓ PLCs used as RTUs

**Section C**

- ✓ Communication architectures and philosophies
- ✓ SCADA systems software and protocols
- ✓ New technologies in SCADA systems

**Section D**

- ✓ The components of a SCADA system
- ✓ Specialized SCADA protocols
- ✓ Distributed network protocol
- ✓ OPC & DDE

**Section E**

- ✓ Local area network systems

- ✓ Network topologies
- ✓ Bus topology
- ✓ Star topology
- ✓ Ring topology
- ✓ The RS-232/RS-422/RS-485 interface standards

### **Section F**

- ✓ Central site computer facilities
- ✓ Recommended installation practice

In addition with the theoretical session we will try to acquire and practice the project development techniques of SCADA software WINCC.

## **SIEMENS WINCC**

### **WinCC System Overview**

#### **Project Development in WinCC**

- ✓ WINCC main features, composition and methods of use. Basic design concepts
- ✓ Installation of the integrated development environment.
- ✓ General settings. The integrated development environment as a tool for uniform project development.
- ✓ Development methods.
- ✓ Project structure.
- ✓ Project components
- ✓ Calls of screens, programs, database queries, documents. Arguments. Operations in the Project Explorer
- ✓ HMI screens editor. Screen templates. Screen call in the project node. Screen arguments for data presentation. Resource libraries.
- ✓ Basic concepts: screens, layers, graphic elements, graphic objects. .
- ✓ Graphic elements dynamization.
- ✓ Graphic objects features. Making a dynamic HMI screens with objects.

### **Integration of WinCC with PLC & Field Devices**

#### **Network based project developments**

#### **Hardware Software used:**

- ✓ S7-200
- ✓ Microwin, WINCC

#### **FOR REGISTRTION & INFORMATION:**

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