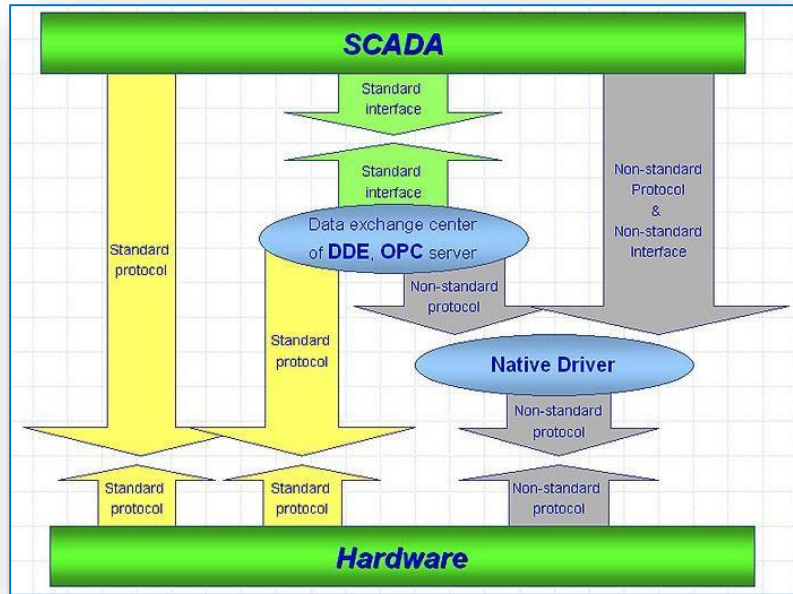




ICE048

SCADA & Communications Standard

Course Introduction:

The SCADA is being extensively used in oil and gas, petrochemicals, power, steel and cement manufacturing/ production, packing, raw material processing etc. for monitoring, operation, alarms and sequence of events recording, database management, reports and logs etc. These are operated either in standalone mode and or they are interfaced with PLC and DCS for enhanced functionality. An effective SCADA system provides better front end for the process operators with enhanced graphics and plant mimics and also helps process and instrumentation engineers for better diagnostics and maintenance.

This course is developed especially for the design, project, commissioning, and maintenance engineers and also for the programmers, field engineers and supervisors dealing with SCADA design and operations.

This is an introductory course, which aims to build a good understanding about the basics of SCADA and communication standards and protocols. It focuses on providing the practical aspects of SCADA commissioning and troubleshooting.

A special emphasis on real life implementations, case studies and international standards would ensure participants to co-relate the theory with their day to day practice. A brief introduction to hierarchical structure of automation and control systems would help the participants to enhance their exposure related to control pyramid and interface to office automation systems.

Course Objectives:

Upon successful completion of this course, the delegates will be able to:

- Have a brief exposure to Hierarchical Structure of Automation and Control Systems
- Learn SCADA fundamentals and architectures
- Understand SCADA programming for front end displays
- Understand alarm management, data logging, trends and reports
- Have knowledge on SCADA Project Engineering, Design and Selection vis-à-vis applications
- Master the art of SCADA maintenance and troubleshooting
- Understand ISO OSI Seven Layer Communication Structure
- Learn communication interfaces viz. RS 232, RS485, Ethernet
- Learn communication protocols viz. Modbus, IEC61850

Who Should Attend?

This course is intended for all Instrumentation, Electrical, Mechanical and Process Engineers, Project Engineers, Maintenance Engineers and Supervisors interested to work in the field of SCADA,

DCS/ Automation and Process Control. The course will also definitely be beneficial for the all the other department people concerned with the plant operations, production, maintenance and safety. It could be also useful for the procurement and quality personnel.

Course Outline:

Day 1:

- Evolution of Process Control/ Automation
- Hierarchical Structure of Control Systems
- Current Scenario – PLC, SCADA and DCS based automation
- SCADA Block Diagram, Components, Architectures, Redundancy
- Concepts
- SCADA hardware configuration

Day 2:

- Introduction to HMI and SCADA functionality
- SCADA programming and operations
- Plant Mimic and Animations
- Alarms Philosophy, Configuration and Management
- Continuous Process Control Application and Case Study

Day 3:

- SCADA features
- Development and Applications of Data Logs, Database
- Management
- Trends and Reports
- Security and Access Controls

Day 4:

- SCADA Communications
- ISO/OSI Seven Layer Communication Structure
- Communication Interfaces RS232, RS485, Ethernet
- Communication Protocols
- Modbus ASCII, RTU

Day 5:

- SCADA Engineering
- Design/ Specifications and Selection
- Documentation and Project Engineering
- Installation and Commissioning
- Diagnostics
- Batch Process Control Application and Case Study

Course Methodology:

A variety of methodologies will be used during the course that includes:

- (30%) Based on Case Studies
- (30%) Techniques
- (30%) Role Play
- (10%) Concepts
- Pre-test and Post-test
- Variety of Learning Methods
- Lectures
- Case Studies and Self Questionnaires
- Group Work
- Discussion
- Presentation

Course Certificate:

International Center for Training & Development (ICTD) will award an internationally recognized certificate(s) for each delegate on completion of training.

Course Fees:

To be advised as per course location. This rate includes participant's manual, and-Outs, buffet lunch, coffee/tea on arrival, morning & afternoon of each day.

Course Timings:

Daily Course Timings:

08:00 - 08:20	Morning Coffee / Tea
08:20 - 10:00	First Session
10:00 - 10:20	Coffee / Tea / Snacks
10:20 - 12:20	Second Session
12:20 - 13:30	Lunch Break & Prayer Break
13:30 - 15:00	Last Session