

## **(5) Supervisory Control and Data Acquisition (Scada) Systems**

### **WHO SHOULD ATTEND**

This short course is aimed at the instrument technician and the automation technician. It is especially suitable as a bridging course for technicians wishing to qualify as automation technicians. The electrical technician will also find this course suitable as an enhancement to his career. Mechanical, supervisory and management staff will also find this very useful as they have a “need to know” in carrying out their duties.

### **COURSE OBJECTIVES**

At the end of this training, participants will be able to:

- Describe the operation of a SCADA system and construct a block diagram.
- Describe historical events leading up to the development of a full blown supervisory control and data acquisition system.
- Describe the function of a master terminal unit
- Describe the function of a remote terminal unit
- Describe a PLC and its location within a SCADA system
- Describe what is meant by the term “real-time”
- What is meant by scanning time in a SCADA system
- Calculate the scan interval for an installed SCADA system
- Calculate the data rate for an installed SCADA system.
- Describe the DNP-3 protocol
- Describe the SCADA system architecture
- Describe TCP/IP
- Describe PLC/DCS/SCADA architectures
- Select software as “proprietary” or “open” for a particular SCADA system application.
- Describe local area networks (LANs), Ethernet and Fieldbuses
- Describe wireless networks and types of communication

### **CONTENT**

- Introduction to SCADA and remote control
- The SCADA as a “two-way” system
- Real-time systems
- Scanning time of an installed SCADA system
- SCADA communications and DNP-3
- Transmission control protocol (TCP/IP)
- SCADA systems architecture
- PLC/DCS/SCADA architecture
- Advantage and disadvantages of each type of architecture
- The computer/intelligent electronic device (IED) architecture
- SCADA software, proprietary or open?
- Local area networks (LANs)
- The industrial Ethernet
- An introduction to Fieldbuses
- Wireless networks

The delivery is a blend of classroom instruction and discussion combined with workshop activity where possible. It is also supported by multi-media training materials, and will involve small group project work where the participant is expected to work as a team member. Other methods employed are computer based training materials, DVD and video.

\* There is a Final examination and Course evaluation

**INTENDED FOR**

Instrument technician. Automation technician. Automation technicians. Electrical technician, Mechanical, supervisory and management staff

**DURATION**

5 days