



POORNIMA
INSTITUTE OF ENGINEERING & TECHNOLOGY

REPORT ON PLC/SCADA WORKSHOP (23-24 Feb. 2015)
For
DEPARTMENT OF ELECTRICAL ENGINEERING

Objective

The workshop was based on the applications of PLC (Programmable Logic Controller) and SCADA (Supervisory Control and Data Acquisition).

Resource Persons

Poornima Institute of Engineering & Technology, Jaipur Electrical Engineering department conducted a workshop on PLC/SCADA with technical support by VISION AUTOMATION SOLUTIONS on 23-24 Feb. 2015. The workshop was based on the Basics of PLC/SCADA.

Overview

The workshop was based on PLC (Programmable Logic Controller) and SCADA (Supervisory Control and Data Acquisition). They explained how the advantages of PLC dominated over the disadvantages of Microcontrollers in the terms of numbers of inputs and outputs, memory, networking etc. The workshop started with the brief introduction of Industrial Automation. They told us that how automation encompasses the whole system of industries by providing efficient technology to produce more products at a greater speed at the urge of low cost. And which encourages competition in the market and also the need of more efficient technologies. They also described about of various applications of automation and also of various types of components such as relays, switches etc. They briefed the description of PLC. They told us that PLC is operated similar to any other ordinary controller but it is different from others as it is controlled through software. It looks at states of Inputs. Based on these states, the PLC makes decisions, and then commands output states. The instructions that tell the output devices what to do base on the conditions returned by the input devices are written in programs that are stored and run by the PLC. It consist o five major parts- Input/output modules, Power Supply, Programming device and CPU. They explained more about automation by giving some examples through videos that were – biscuit manufacturing, bottle packing, dairy products etc. Some information regarding SCADA like its characteristics- Analogue inputs for live monitoring, Control relays (SBO points) for remote access and control, Graphical web interface, alarm descriptions, Industrial-grade durability. The leading manufacturers of SCADA and PLC are- – Wonder ware (Intouch), Allen Bradley (RS view 32),

Siemens (WinCC). The programming for PLC was practiced by the students and working on SCADA software was also taught.

He told that automation encompasses many different products that are all used to allow companies to make their products faster and in a more efficient manner. This allows the companies to make more products while spending less money, thus allowing them to be competitive in their marketplace. Industrial Automation is the industry of helping business to automate the systems that produce their goods or services in the most efficient manner possible. He explained more about automation by giving some examples that were automobile assembly line, parcel sorting system, batch brewing system, amusement park ride, bottling lines. In automation the most important part is control system. He gave a brief introduction on PLC (Programmable Logic Controller). PLCs look at states of Inputs. Based on these states, the

PLC makes decisions, and then commands output states. The instructions that tell the output devices what to do base on the conditions returned by the input devices are written in programs that are stored and run by the PLC. The earliest automation systems were nothing but directly wired systems i.e. a control system where all the components are designed and tested together and then sold as a complete system. You do not get many choices for controllers, I/O, networks, and software. Eventually, PLCs were developed that could be programmed. This allowed the engineers to easily create much more complex systems than relay panels allowed. It also allowed changes to be made to the system without having to change any actual wiring. PLCs are available in market of different companies. Some vendors of PLC are Siemens, Delta, Mitsubishi, KPIT.

Conclusion

The seminar was of great use for the students, it helped them figure out the exact use and meaning of industrial automation in today's world. It also helped them to learn about PLC and also how to work on SCADA. The seminar was a great success for the department.