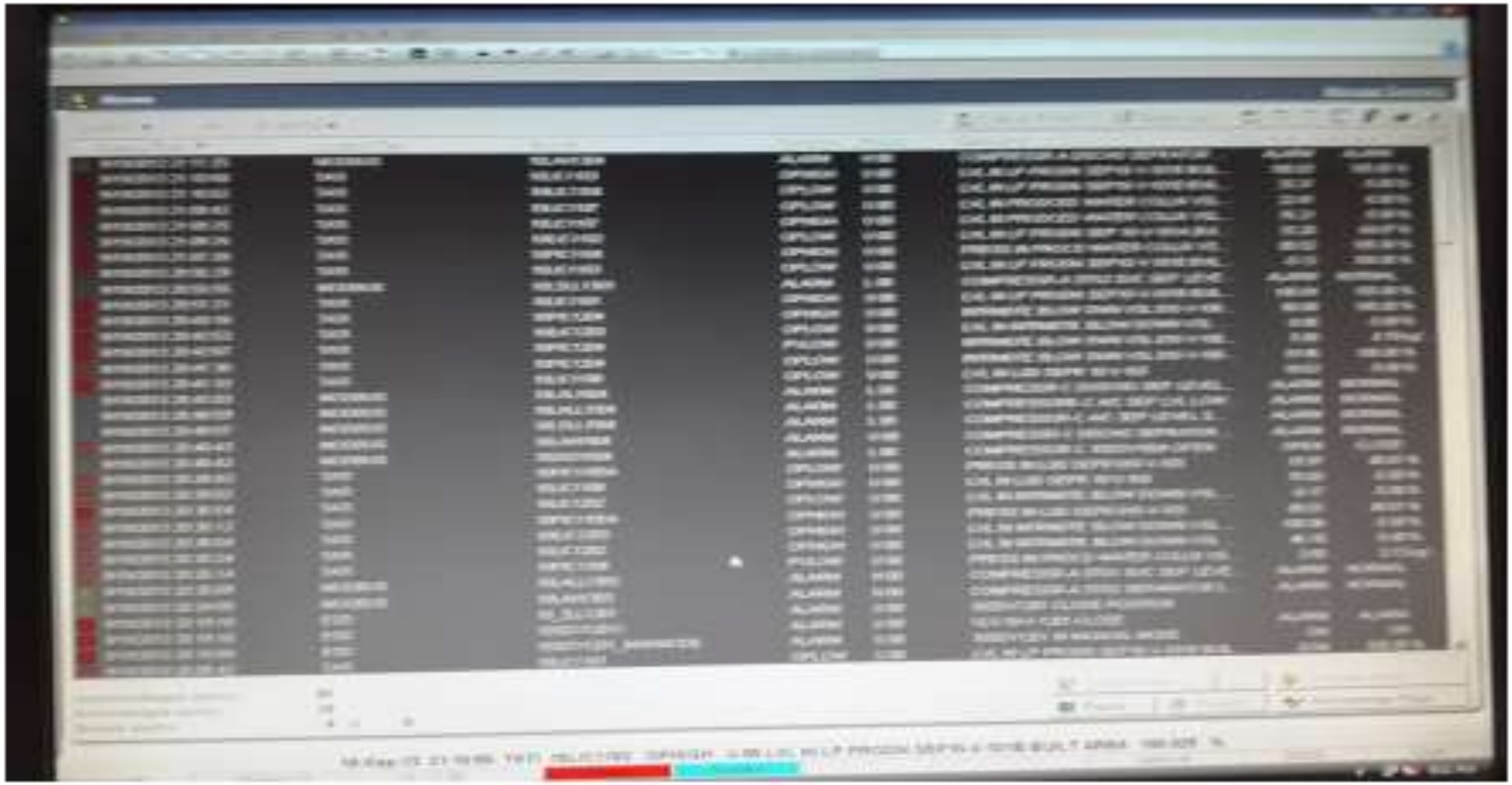
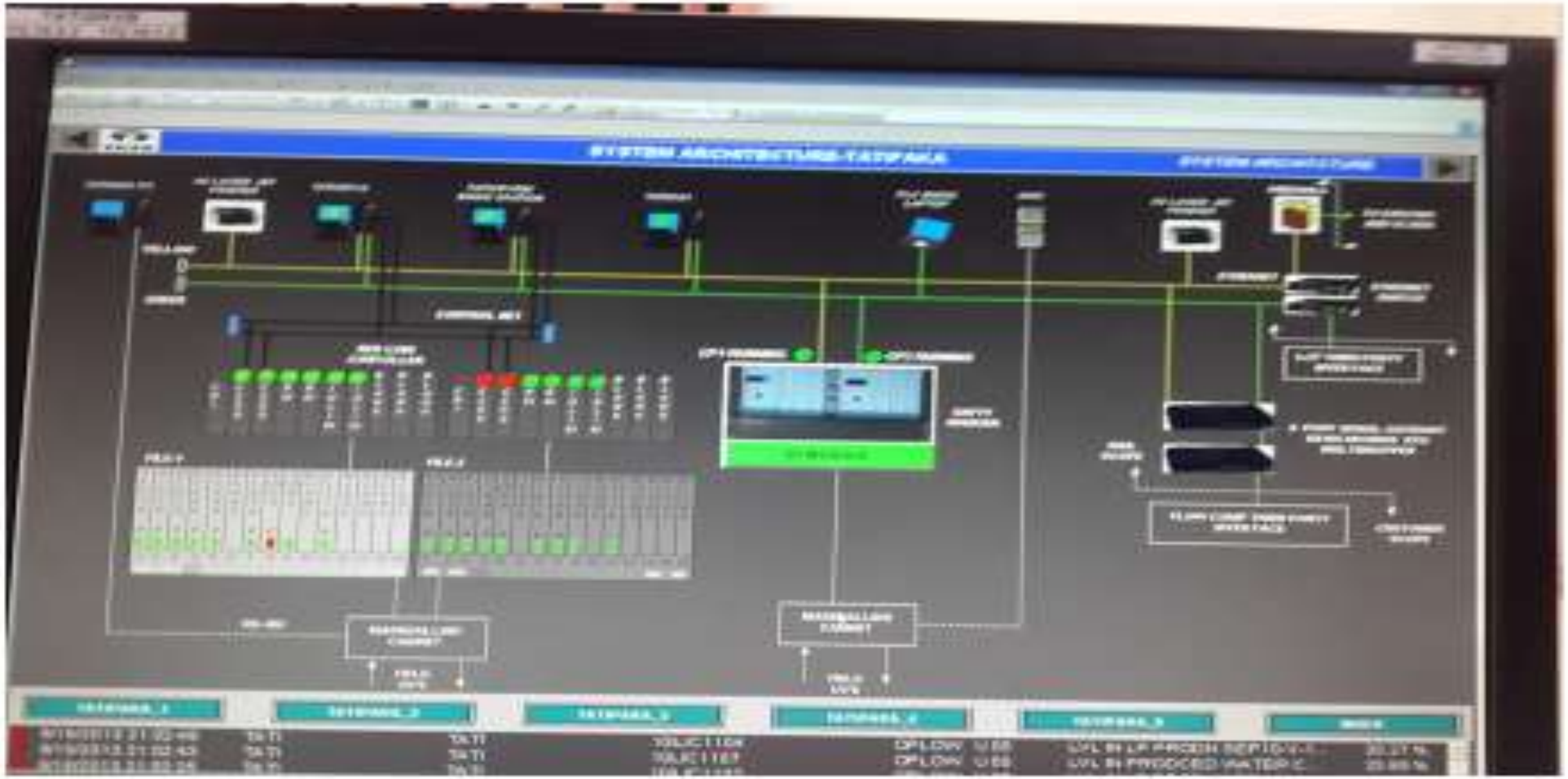
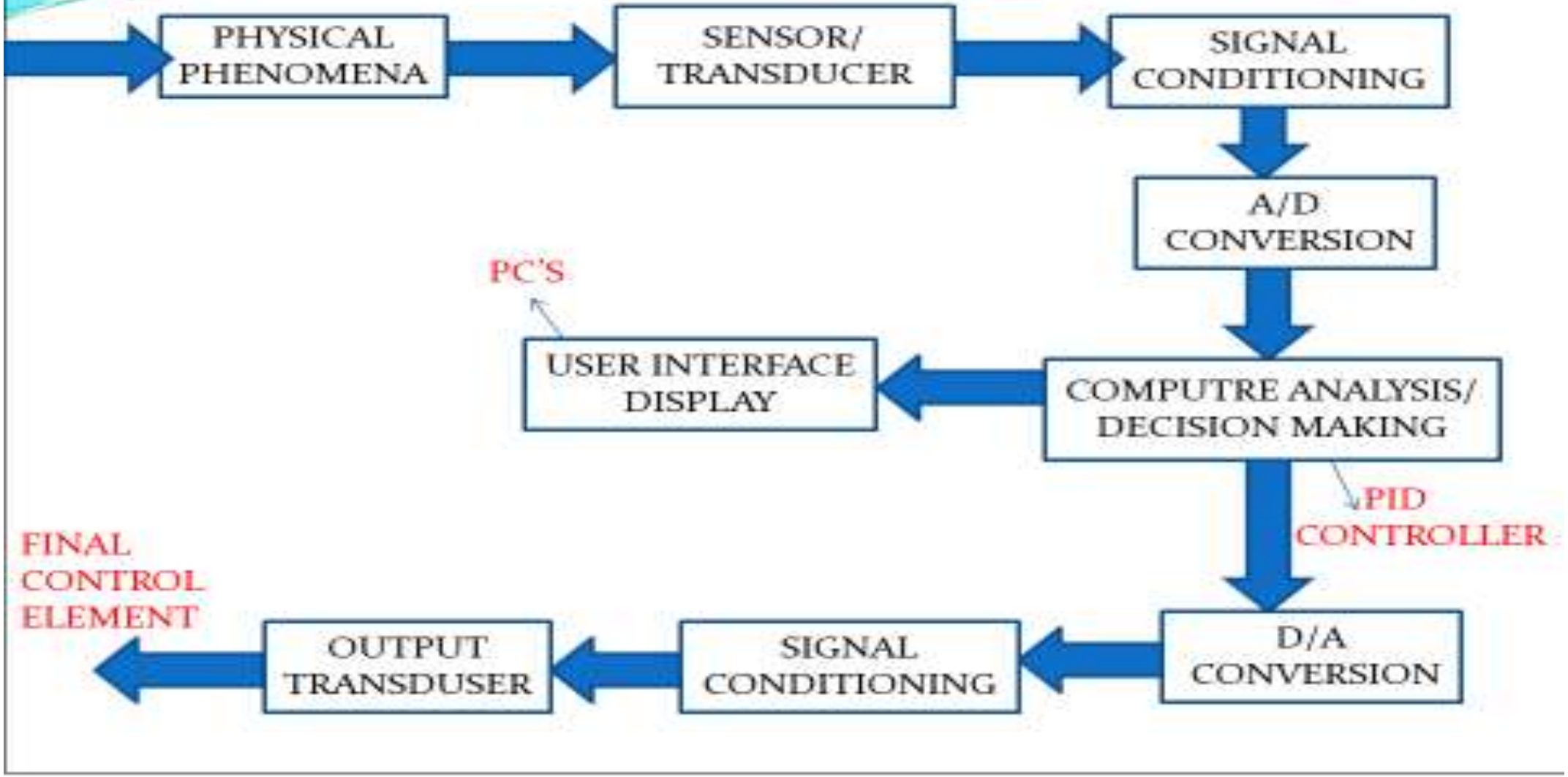
Unit-5



TOTAL AUTOMATION SYSTEM ARCHITECTURE



CONTROL COMMUNICATION



COMPUTER-BASED DATA-ACQUISTION AND CONTROL SYSTEM

- The process/measured variable may be any physical or chemical parameter, such as temperature, pressure, flow, liquid level, chemical composition and motion etc....;
- The sensor/transducer is the measuring device (primary element) that converts the measured variable into an electrical quantity. Common transducers include RTD, thermocouples, strain gages, pH cells, and switches. The signal from a transducer can be in the form of a voltage, current, charge, resistance and so on.....
- Signal conditioning involves the manipulation of the raw transducers output into a form suitable for accurate analog-to-digital (A/D) conversion.

- Signal conditioning can include filtering, amplification, linearization, and so on....
- Data conversion provides the translation between the real world (mostly analog) and the digital domain of the computer, where analysis, decision making, report generation, and user interface operations are easily accomplished.
- To produce analog output signals from the computer (for stimulus or control) digital-to-analog (D/A) conversion is used.
- Signal conditioning and output transducers provide an appropriate interface to the outside world via power amplifiers, valves, motors and so on....