SMART SENSOR

PREPARED BY:
SAVAT NISHAT
GADHAVI JAYDEEP
CONTENT

- INTRODUCTION TO SMART SENSOR
- DEFINITION
- ARCHITECTURE
- TYPES OF SMART SENSORS
- ENHANCEMENT OF SMART SENSOR
- COMMERCIAL USES
- ADVANTAGES
- APPLICATION
INTRODUCTION

- What is SMARTSENSOR?
- Consists of Transduction Element, Signal Conditioning Electronic and controller/processor.
- What it does?
- Why it is used?
DEFINITION

- Smart Sensors are sensors with Integrated Electronics that can perform the following functions:
  a) Logic Function
  b) Two-way communication
  c) Make Decisions
TYPES OF SMART SENSORS

- Thermal Signal Domain
- Magnetic Signal Domain
- Chemical Signal Domain
- Thermal Signal Domain
- Mechanical Signal Domain
ADVANTAGES

- Minimum Interconnecting Cables
- High Reliability
- High Performance
- Easy to Design, Use and Maintain
- Scalable -Flexible System
- Small Rugged Packaging
- Minimum Cost
Enhancement of application

- Self calibration
- Computation
- Communication
- Multisensing
COMMERCIAL USES OF SMART SENSOR

- ARMY
- AIRLINES
- SECURITY SYSTEM
Military Applications

- Desirable characteristics of sensor networks
  - rapid deployment,
  - self-organization
  - fault tolerance

- Example applications
  - Monitoring friendly forces, equipment and ammunition
  - Battlefield surveillance
  - Reconnaissance of opposing forces and terrain
  - Targeting
  - Battle damage assessment
Environmental Applications

- Desirable characteristics of sensor networks
  - untethered sensors
  - No interruption to the environment
  - Redundancy

- Example applications
  - Forest fire detection
  - Biocomplexity mapping of the environment
  - Flood detection
  - Precision in Agriculture
Home applications

- Fire and smoke sensors
- Entertainment controls
- Programmable lighting
- Air conditioning
- Moisture sensing and control
- Load shedding and energy management
- Electronic locks
- Security sensors
- Sprinkler actuators
CONCLUSION

- Smart Sensors has developed and proved a new miniaturized Smart Sensor Network Measurement System, which represents a paradigm shift from a centralized to a distributed processing measurement approach to order and trend analysis in a very small, light weight, and cost effective package
THANK YOU