- Wireless Sensor Networks:
    - A wireless sensor network (WSN) has important applications such as remote environmental monitoring and target tracking, particularly in recent years with the help of sensors that are smaller, cheaper, and intelligent.
    - Sensors are equipped with wireless interfaces with which they can communicate with one another to form a network. A WSN consists of a number of sensor nodes (few tens to thousands) working together to monitor a region to obtain data about the environment.
    - The design of a WSN depends significantly on the application, and it must consider factors such as the environment, the applications design objectives, cost, hardware, and system constraints.

  Current Activities in WSN:
    - Developing testbed for target tracking Using Passive Infrared and Ultrasonic Sensors
    - Improving the delivery rate in low power wireless networks
    - Guided Navigation of Friendly Vehicle towards tracked Object
    - Design and development of smart mines and explosive ordinance for intelligent activation and deactivation and safe recovery based on secure WSN.
    - Design of a data mule for data collection from remotely placed sensor nodes

- Passive Optical Networks:
    - Passive Optical Network (PON) is a form of fiber optic access network having low cost optical passive components
    - It has enormous potential to meet the need for high bandwidth access links to users
    - Standards for PON include Ethernet PON - IEEE 802.3ah and Gigabit PON - ITU-T G.984

  Current Activities in PON:
    - Study of the mechanisms for energy efficiency.
    - Design of Dynamic Bandwidth Allocation algorithms for long reach PON for higher capacity and increased number of users over long distances
    - Survey of survivable protection Architectures for WDM PON

- WiMAX:
    - WiMAX - Worldwide Interoperability for Microwave Access.
    - It is based on the IEEE 802.16 standard.
    - WiMAX is a telecommunications technology that provides wireless transmission of data at a broadband speed of up to 10 Mbps and is one of the most promising technologies for 4G.
    - Potential applications include :
        - Connecting WiFi hotspots to the internet
        - Providing a wireless alternative to cable and DSL for "last mile" broadband access

  Current Activities in WiMAX:
    - Battalion Management Sytem:
        - It is a complete communication system for an army battalion consisting of platoons of soldiers, health units, tank corps, reconnaissance pilot-less aircrafts etc.
        - Our proposed architecture for the BMS involves WiFi technology and WiMAX based architecture to support high bandwidth capability and better Quality of Service (QoS).