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FACULTY OF EGINEERING AND TECHNOLOGY

WSN (MCS-033)

LECTURE -10

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OUTLINE

- Challenges of WSN
- Component of WSN
- MCQ
- Reference

Challenges of WSN:

1. Quality of Service
2. Security Issue
3. Energy Efficiency
4. Network Throughput
5. Performance
6. Ability to cope with node failure
7. Cross layer optimization
8. Scalability to large scale of deployment

Components of WSN:

Sensors:

Sensors in WSN are used to capture the environmental variables and which is used for data acquisition. Sensor signals are converted into electrical signals.

Radio Nodes:

It is used to receive the data produced by the Sensors and sends it to the WLAN access point. It consists of a microcontroller, transceiver, external memory, and power source.

WLAN Access Point:

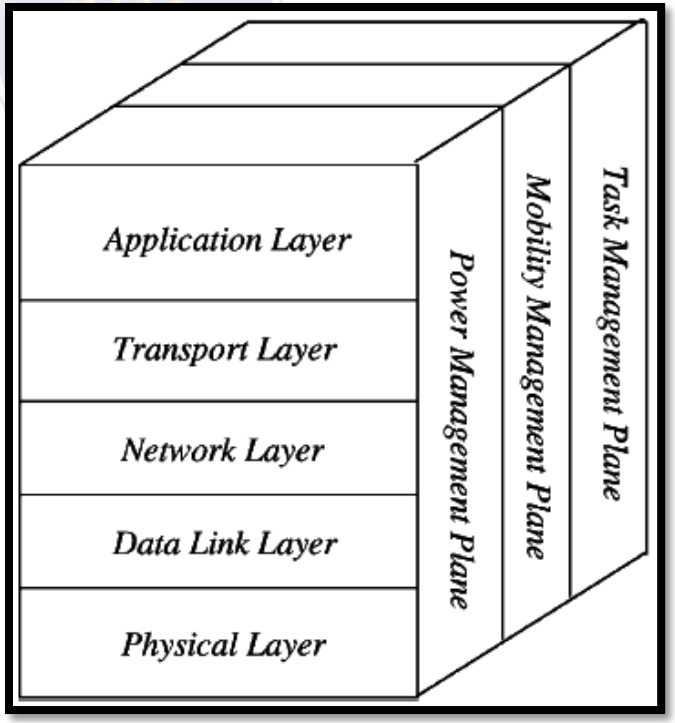
It receives the data which is sent by the Radio nodes wirelessly, generally through the internet.

Evaluation Software:

The data received by the WLAN Access Poing is processed by a software called as Evaluation Software for presenting the report to the users for further processing of the data which can be used for processing, analysis, storage, and mining of the data.

Wireless Sensor Network Architecture:

The most common WSN architecture follows the OSI architecture Model. The architecture of the WSN includes five layers and three cross layers. Mostly in sensor n/w we require five layers, namely application, transport, n/w, data link & physical layer. The three cross planes are namely power management, mobility management, and task management. These layers of the WSN are used to accomplish the n/w and make the sensors work together in order to raise the complete efficiency of the network.



WIRELESS AD-HOC NETWORK (WANET)

Characteristics of Wireless Sensor Network:

1. The consumption of Power limits for nodes with batteries
2. Capacity to handle with node failures
3. Some mobility of nodes and Heterogeneity of nodes
4. Scalability to large scale of distribution
5. Capability to ensure strict environmental conditions
6. Simple to use
7. Cross-layer design

MCQ

1) Explain the physical layer and transceiver design considerations in wireless networks.

2) Explain major issues that are to be considered for Wireless Internet.

3) Discuss in detail various modulation techniques.

4) The portion of the electromagnetic spectrum occupied by a signal is called _____

(a) Signal spectrum (b) Bandwidth (c) Frequency width (d) Signal strength

5) You have 5 information signals and only one transmitter. What technique will help in transmitting all the 5 signals?

(a) Frequency modulation (b) Multiplexing (c) Amplification (d) Amplitude modulation

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