

Unit-2

Data Link Layer

Topic-8

Wireless Lan

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Wireless LAN stands for **Wireless Local Area Network**. It is also called LAWN (**Local Area Wireless Network**). WLAN is one in which a mobile user can connect to a Local Area Network (LAN) through a wireless connection.

The IEEE 802.11 group of standards defines the technologies for wireless LANs. For path sharing, 802.11 standard uses the Ethernet protocol and CSMA/CA (carrier sense multiple access with collision avoidance). It also uses an encryption method i.e. wired equivalent privacy algorithm.

Wireless LANs provide high speed data communication in small areas such as building or an office. WLANs allow users to move around in a confined area while they are still connected to the network.

In some instance wireless LAN technology is used to save costs and avoid laying cable, while in other cases, it is the only option for providing high-speed internet access to the public. Whatever the reason, wireless solutions are popping up everywhere.

Examples of WLANs that are available today are NCR's waveLAN and Motorola's ALTAIR.

WLANs, as standardized by IEEE 802.11, operates in two basic modes, infrastructure, and ad hoc mode.

Infrastructure Mode – Mobile devices or clients connect to an access point (AP) that in turn connects via a bridge to the LAN or Internet. The client transmits frames to other clients via the AP.

Ad Hoc Mode – Clients transmit frames directly to each other in a peer-to-peer fashion.

They provide clutter-free homes, offices and other networked places.

The LANs are scalable in nature, i.e. devices may be added or removed from the network at greater ease than wired LANs.

The system is portable within the network coverage.

Access to the network is not bounded by the length of the cables.

Installation and setup are much easier than wired counterparts.

The equipment and setup costs are reduced.

Since radio waves are used for communications, the signals are noisier with more interference from nearby systems.

Greater care is needed for encrypting information. Also, they are more prone to errors. So, they require greater bandwidth than the wired LANs.

WLANs are slower than wired LANs.

Thank You