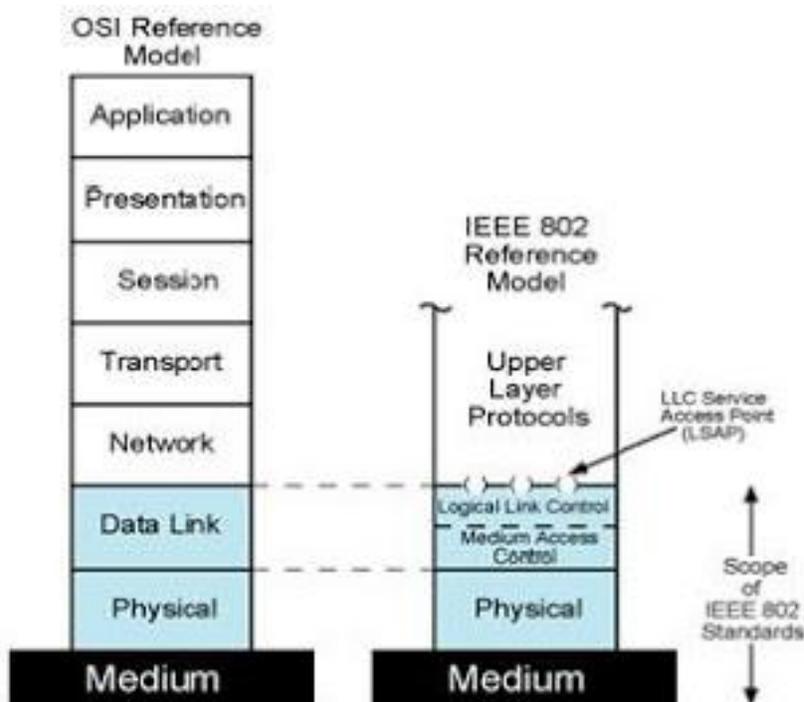# Local Area Network
LAN (LOCAL AREA NETWORK)

LANs are usually owned by the organization that are using the networks to interconnect equipments. They have much greater capacity than WAN. LAN is spread within a building or within an area, and they have high speed because of high data rate.

Protocol Architecture:

IEEE 802 reference model specifically for LAN transmission address issues relating to the transmission of blocks of data over the network. In OSI terms, higherl ayer protocols (layer 3 or 4 and above) are independent of network architecture and are applicable to LANs. Thus, a discussion of LAN protocols is concerned principally with lower layers of the OSI model.

Physical layer
*   Encoding/decoding of signals
*   Preamble generation/removal (for synchronization)
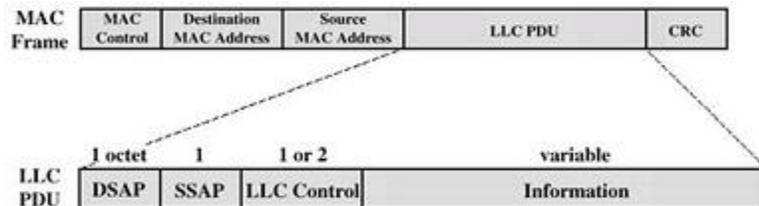*   Bit transmission/reception

In addition, the physical layer of the 802 model includes a specification of the transmission
medium and the topology.

Medium Access Control& Logical Link Control:

The OSI layer 2 (data link) is divided into two in LAN.

1-Medium Access Control (MAC): It performs assembling of data into frames with address and error detection field(for transmission), and disassembling of frame (on reception), MAC layer recieves data from LLC layer and perform the error detection and address recognization.

2- Logical Link Control: It governs to the LAN transmission medium, and provide an interface to higher layers and perform flow control operation.
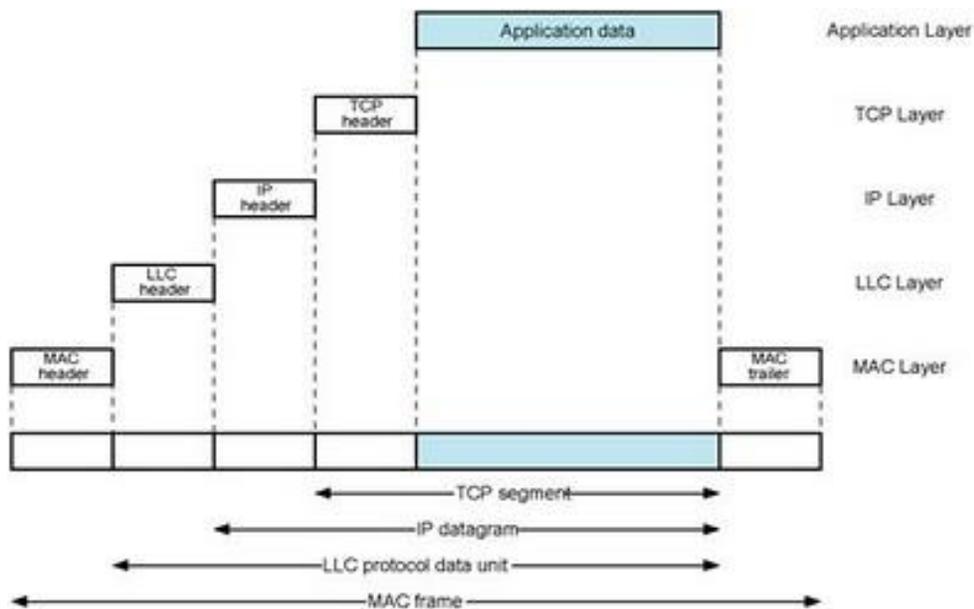

LAN Protocols in Context:

Figure shows the relationship between the levels of the architecture. User data are passed down to LLC, which appends control information as a header, creating an LLC protocol data unit (PDU). This control information is used in the operation of the LLC protocol. The entire LLC PDU is then passed down to the MAC layer, which appends control information at the front and back of the packet, forming a MAC frame. Again, the control information in the frame is needed for the operation of the MAC protocol.

Source:

http://datacombasic.blogspot.in/2011/03/local-area-network.html