SNS COLLEGE OF TECHNOLOGY

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Department of Biomedical Engineering

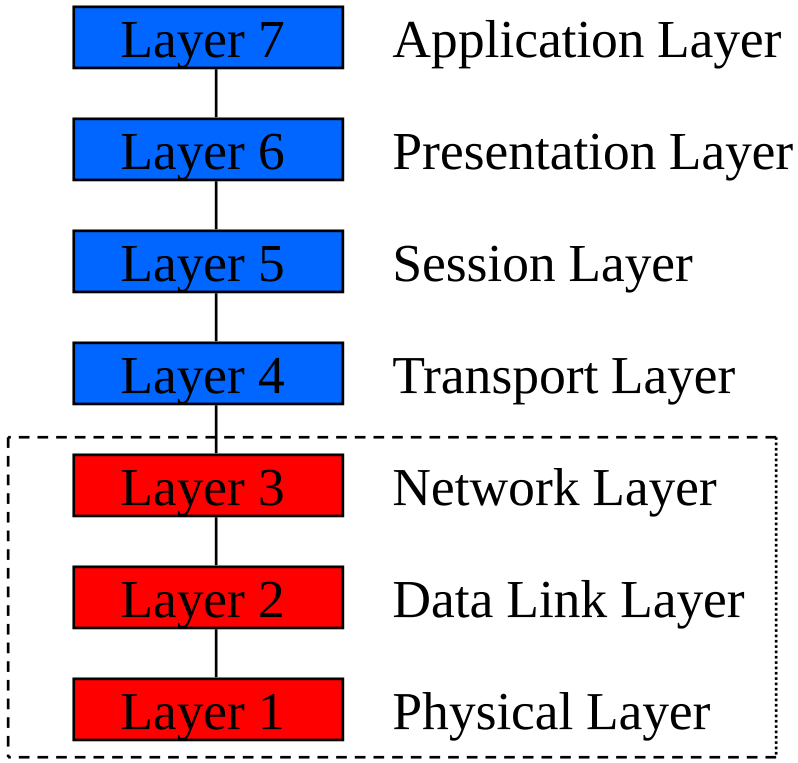
Course Name: 19BMO401 & TELEHEALTH TECHNOLOGY

IV Year : VII Semester

Unit 3 –TELEMEDICAL STANDARDS

Topic :ISO-OSI

OVERVIEW



- Layers 1-4 relate to communications technology.
- Layers 5-7 relate to user applications.

LAYER 7: APPLICATION LAYER

- Level at which applications access network services.
- Represents services that directly support software applications for file transfers, database access, and electronic mail etc.

LAYER 6: PRESENTATION LAYER

- Related to representation of transmitted data
  - Translates different data representations from the Application layer into uniform standard format
- Providing services for secure efficient data transmission
  - e.g. data encryption, and data compression.

LAYER 5: SESSION LAYER

- Allows two applications on different computers to establish, use, and end a session.
  - e.g. file transfer, remote login
- Establishes dialog control
  - Regulates which side transmits, plus and how long it transmits.
- Performs *token management* and *synchronization*.

LAYER 4: TRANSPORT LAYER

- Manages transmission packets
  - Repackages long messages when necessary into small packets for transmission
  - Reassembles packets in correct order to get the original message.
- Handles error recognition and recovery.
  - Transport layer at receiving acknowledges packet delivery.
  - Resends missing packets

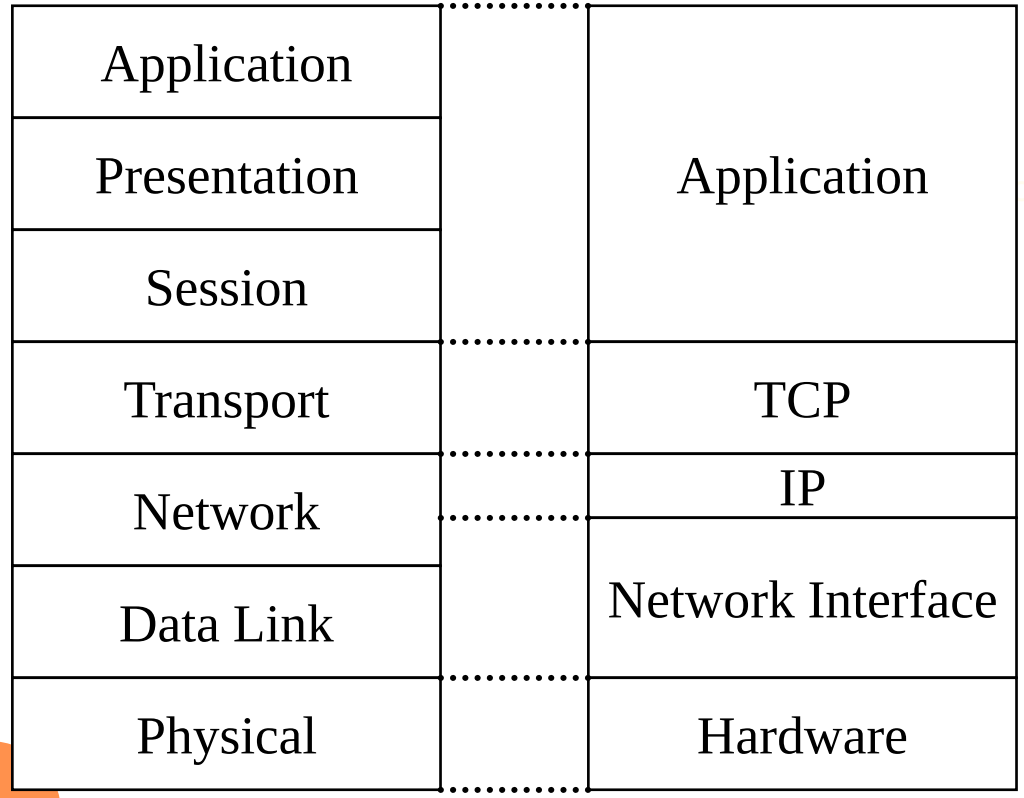
•Layer 3: Network Layer

- Manages addressing/routing of data within the subnet
  - Addresses messages and translates logical addresses and names into physical addresses.
  - Determines the route from the source to the destination computer
  - Manages traffic problems, such as switching, routing, and controlling the congestion of data packets.
- Routing can be:
  - Based on static tables
  - determined at start of each session
  - Individually determined for each packet, reflecting the current network load.

LAYER 1: PHYSICAL LAYER

- Transmits bits from one computer to another
- Regulates the transmission of a stream of bits over a physical medium.
- Defines how the cable is attached to the network adapter and what transmission technique is used to send data over the cable. Deals with issues like
  - The definition of 0 and 1, e.g. how many volts represents a 1, and how long a bit lasts?
  - Whether the channel is simplex or duplex?
  - How many pins a connector has, and what the function of each pin is?

INTERNET PROTOCOLS VS OSI



- Explicit Presentation and session layers missing in Internet Protocols
- Data Link and Network Layers redesigned

RELIABILITY

- Reliable services never lose/corrupt data.
- Reliable service costs more.
- Typical application for reliable service is file transfer.
- Typical application not needing reliable service is voice traffic.
- Not all applications need connections.