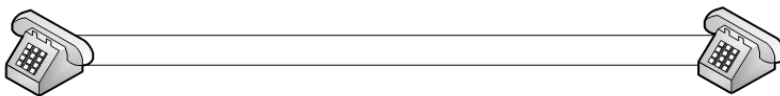


2.12 Metro Ethernet Forum

2.13 PON Forum

3. Network Fundamentals

3.1 Point to Point Networks



Such networks have a dedicated connection between DTEs (computers). That can be a physical connection or logical connection. However a fixed bandwidth (bit rate) is allocated at all the time. But the utilization is less than the allocated bandwidth. Hence the allocated bandwidth is not effectively utilized.

eg: Leased circuit

3.2 Switched networks

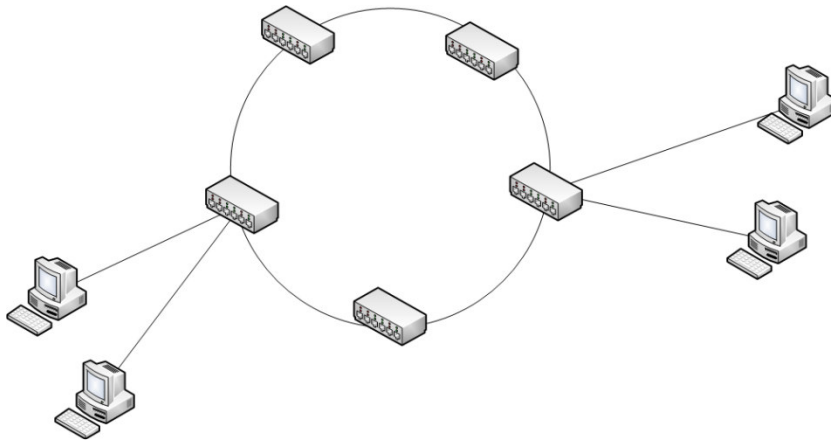


Diagram to be corrected

The connecting is provided whenever necessary only.

There are two of switching Methods.

Circuit Switching

Packet Switching

3.3 Broadcast networks

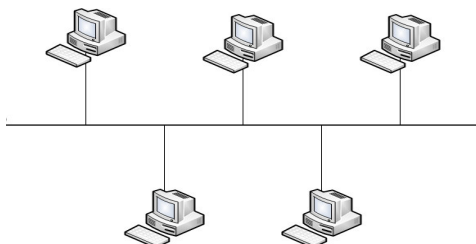
One computer/device transmit the signal and the signal is received by all other computers.

eg: LAN bus network

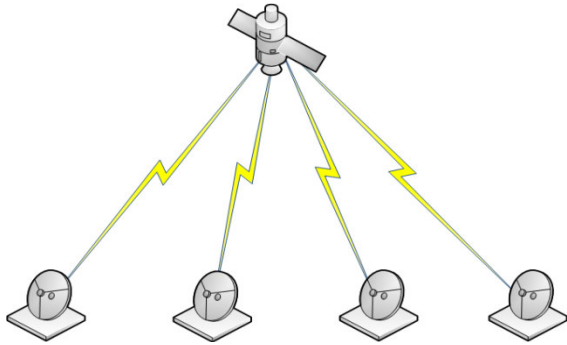
Satellite network

Packet radio network

3.3.1 Bus network



3.3.2 Satellite network

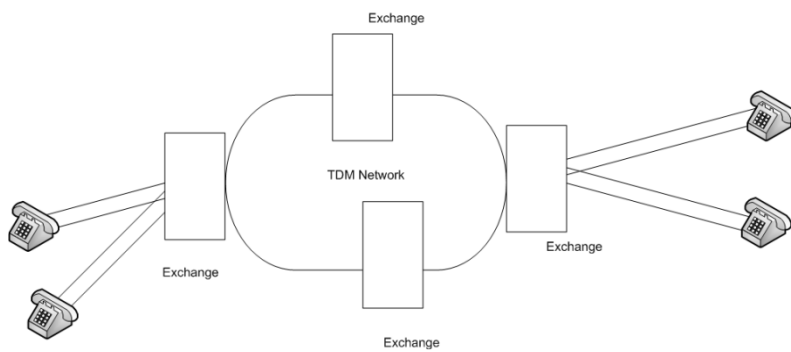


3.3.3 Packet radio network

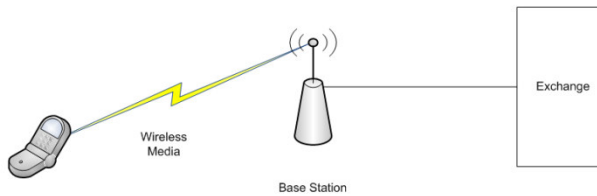
Aloha Slotted

Slotted Aloha Slotted

3.4 Fixed Telephone Network



The telephone is connected to the telephone exchange by using a pair of copper cable called loop.



In fixed wireless telephone network, the telephone is connected to Base station by using a wireless (radio) signal.

In order to establish a call the control signals are used. There are signals between user and exchange also among exchanges.

Each telephone is identified by using a telephone number. The calling subscriber dialed the telephone number of the called subscriber. The telephone number is analyzed by the telephone exchange and connects to the other exchange by using a TDM time slot via the TDM network. The type of switching performed in the exchange rate is called “Circuit switching”. It has two methods called “Time switching” and “Space switching”.

3.5 Mobile Networks

The mobile network is similar to fixed wireless network. In addition the mobility management is to be done. The details are discussed in the chapter 7.

3.6 Computer networks

3.6.1 Personal Area Networks.

Bluetooth

3.6.2 Local Area Networks.

Ethernet

3.6.3 Metropolitan Area Networks.

Metro Ethernet

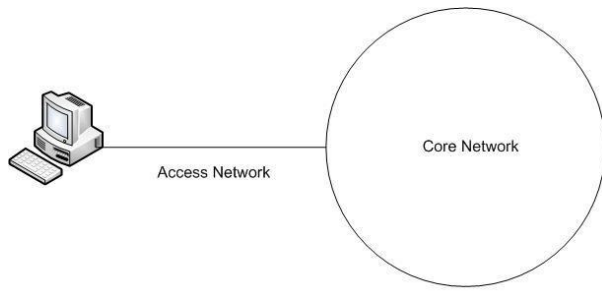
Metropolitan wireless Network

3.6.4 Wide Area Network

3.7 Public switched Data Network (PSDN)

X.25 network

3.8 Access and core Network



Any type of network has two main components. That is “Access Network” and “Core Network”.