Competency Level 6.4:

Explores the use of Public Switched Telephone Network (PSTN) to connect two remote devices

Learning Outcomes:

- Describes a PSTN as an analog voice carrying line
- Describes how modems modulate analog signals so that they can be sent along a PSTN line
- Draws a schematic diagram depicting two computers connected using modems via a PSTN line

Public Switched Telephone network (PSTN)

- PSTN (public switched telephone network) is the world's collection of interconnected voice-oriented public telephone networks.
- PSTN stands for **public switched telephone network**, or the traditional circuit-switched telephone network.
- This is the system that has been in general use since the late 1800s.
- It's the aggregation of circuit-switching telephone networks that has evolved from the days of Alexander Graham Bell.
- Using underground copper wires, this legacy platform has provided businesses and households alike with a reliable means to communicate with anyone around the world for generations.
- PTSN comprises all the switched telephone networks around the world that are operated by local, national or international carriers.
- These networks provide the infrastructure and the services for public telecommunication.
- PSTN – Dial Up Connections: Requires a modem and a phone line to dial into a service provider's node, in order to get the connection

Properties of PSTN

- It is also known as Plain Old Telephone Service (POTS)
- Its main objective is to transmit human voice in a recognizable form.
- Presently, most part of PSTN networks is digitized and comprises of a wide variety communicating devices.
- The present PSTNs comprises of copper telephone lines,fiberoptic cables, communication satellites, microwave transmission links and undersea telephone lines. It is also linked to the cellular networks.
- The interconnection between the different parts of the telephone system is done by switching centers. This allows multiple telephone and cellular networks to communicate with each other.
- Present telephone systems are tightly coupled with WANs (wide area networks) and are used for both data and voice communications.
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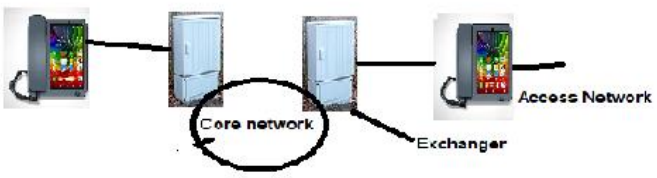
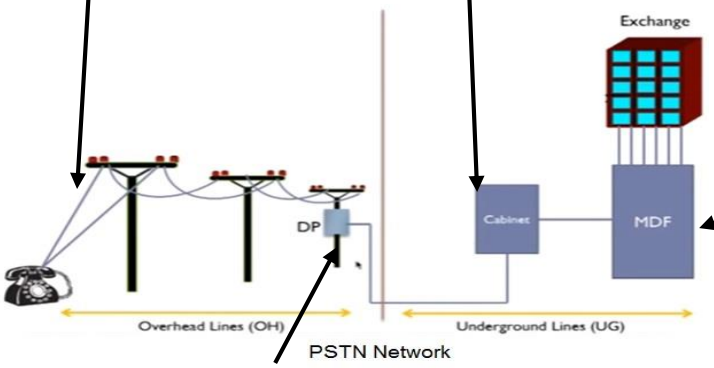
- PSTN has 2 parts
    1. **Access Network**
    2. **Core network**



1. Individual telephones are connected with telephone poles using twisted pair cable.

2. Where all DP are connected

3. all the DPs are connected together at cabinet which is interfaced with MDF (Main Distribution Frame).



4. The poles are getting terminated on DP (Distribution Panel) in the area.

- Using DP we can connect 10-20 telephone connections
- In cabinet connect DPs (about 200 DPs)
- Server Cabinets are connect to Exchanger

Modem

- Modem is short for "Modulator-Demodulator." It is a hardware component that allows a computer or another device, such as a router or switch, to connect to the Internet.
- It converts or "modulates" an analog signal from a telephone or cable wire to digital data (1s and 0s) that a computer can recognize.
- it converts digital data from a computer or other device into an analog signal that can be sent over standard telephone lines.
- Modern modems are typically DSL or cable modems, which are considered "broadband" devices.
- DSL modems operate over standard telephone lines, but use a wider frequency range.
- This allows for higher data transfer rates than dial-up modems and enables them to not interfere with phone calls.
- Cable modems send and receive data over standard cable television lines, which are typically coaxial cables.