Routing and Data Transmission - 6.01.2006

Mihir Gajanan Saudagar - 01CS1035

27th March 2006

1 Introduction

Recovery , Message Formatting
Security-(It is spaceless due to high speed)
- agents are not present

2 Network management

It includes
-Configuring the system.
-reacting to failure
-monitoring the status of the network.

3 Data Communication

-point to point physical linkage.

3.1 Circuit switching,finding a dedicated path.

e.g telephone network
-continuous data transfer.
-lines are dedicated as in they cant used by anybody else.

3.2 Packet switching

-break the message into packets and send the packets out.
-synchronization of the packets

3.2.1 Types of synchronization

- logical path
- no logical path.

-lots of overhead

-Frame relay(group of packets)(variable length).

-an example is ATM-(Asynchronous Transfer Mode)-small packets are sent

4 Data Transmission

//Fourier series

- Any waveform can be represented as a summation of sine waves.

$$y = Asin(2\pi ft + \phi)$$

-range of frequency to be transferred.

4.1 Problems

These are

-Noise

-Quality deterioration //analog

-error //digital

4.2 Designer's limitation

These are

-Bandwidth (limited)

-Data rate (high)

-Accepted error rate

5 Terminology

1. Guided Media - Cable, wired
2. Unguided Media - Wireless
3. Direct link - Signals propagate directly from transmitter to receiver. e.g. point to point.
4. Multipoint - More than two devices share the same medium.
5. Simplex - signal moves in one direction.
6. Half-Duplex - signals move in both directions but not simultaneously.
7. Duplex - signals move in both directions simultaneously.