MODELS OF TRANSMISSION MEDIA FOR A LIBRARY NETWORK:A COMPARATIVE STUDY

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Abstract

Transmission media are the physical pathways (guided or unguided) that connect computers, other devices, and people on a network. Computers and telecommunication devices use signals to represent data. These signals are transmitted from a device to another in the form of electromagnetic energy. Examples of Electromagnetic energy include power, radio waves, infrared light, visible light, ultraviolet light, and X and gamma rays. All these electromagnetic signals constitute the electromagnetic spectrum. Each portion of the spectrum requires a particular or unique transmission media for the transfer of data such we call as Twisted Pair, Coaxial cable, Optical fibber, Satellite, and Wireless etc. In the paper, The Guided (Twisted Pair, Coaxial cable, Optical fiber) and the Unguided Microwaves (Satellite, wifi, wimax, bluetooth) transmission mediums are compared with help of relative plots in terms of their networking capabilities (e.g., speed, damping length, Bandwidth, Cost and Get connection).Optical fibber in the guided media outperforms other medias in better networking performance but optical fibber cable connection is sensitive than twisted Pair and Coaxial cable connections and require higher cost that the same. Twisted pair outperforms coaxial cable. Here it is also notable that coaxial cable can be connected easily without order, but twisted pair not like that. Among Unguided; wimax outperforms other medias in better networking performance in long range even though wi-fi is a substitute for providing a greater power of access than wimax in short range. Here all unguided mediums are better for ease of access than guided.

Keywords: Transmission Medium, Guided Media, Unguided media, Data channel, Data transfer

1. Introduction

Making an appropriate network for a service of library and information science is now common over the world, when such network is to be established or maitained we need much information on neworks and for chosing the appriopriate network particulary considering library envinments, comaprative ideas of different data tansmission medias are very essentially needed, here we make an initial step to compare different tarasmission medias such as the Guided (Twisted Pair, Coaxial cable, Optical fiber) and the Unguided Microwaves (Satellite, wifi, wimax, bluetooth) transmission mediums.

1.1 Data transmission medium

In order for data transmission to occur, there must be a transmission line, also called transmission channel between the two isolated data machines. These transmission channels are made up of several segments that allow the data to circulate in the form of electromagnetic, electrical, light or even acoustic waves. So, in fact, it is a vibratory phenomenon that is propagated over the physical medium. Transmission media are the physical pathways (guided or unguided) that connect computers, other devices, and people on a network. Computers and telecommunication devices use signals to represent data. These signals are transmitted from a device to another in the form of electromagnetic energy. Examples of Electromagnetic energy include power, radio waves, infrared light, visible light, ultraviolet light, and X and gamma rays. All these electromagnetic signals constitute the electromagnetic spectrum. Each portion of the spectrum requires a particular or unique transmission media for the transfer of data such we call as Twisted Pair, Coaxial cable, Optical fibber, Satellite, and Wireless etc.