

Beyond Wires

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Abstract: Unique - This world is creation of god and this e-world is a creation of man. In this e-world the information exchanges is mainly through the wires. So, the wires become the lifelines to the e-world creator. The primary means of communicating the information is through the voice and internet. The crazy man was not satisfied with this internet. He wanted to go “Beyond wires”. This craziness gave him a good way to access internet without any wires. The term wireless is used to describe the way of accessing a network or other communication partners, i.e. without a wire. The wire is replaced by the transmission of electromagnetic waves through ‘the air’. Here, in this paper we would like to present how to plan for a better communication through wireless devices. We also include step by step development of wireless communications from analogous systems to the present state of development. Future expectations over wireless communications are added in this paper.

Keywords: Radio-based Systems, Wireless Communications, Personal Digital Assistants.

INTRODUCTION

Radio-based Systems

As radio-based systems emerged, wireless communications became more readily available and easier to use. An electric transmitter was used to reproduce sound waves and modulate human speech onto a base band radio frequency. The radio wave carrying the transmitted signal could travel greater distances, allowing far more reliability and minimizing the relay process. Several portions of the radio frequency spectrum were allocated to these transmission systems. Each carried its own particular capacities and had distance limitations associated with the band used for transmission.

Free-space Communication

Radio systems propagate information in free space. This free-space communication obviates some of the problems faced by other transmission systems. Advantages of the radio system include the ability to: →Span bodies of water, such as lakes or rivers, where a cable facility.

The Path

The propagation path of a radio signal includes the direct wave, a reflected wave, and a surface wave. These combine to form the ground wave. Another portion of the wave, the refracted path between two antennas with the various components highlighted. These components affect the transmission of the radio signal in terms of loss (attenuation) and distortion.

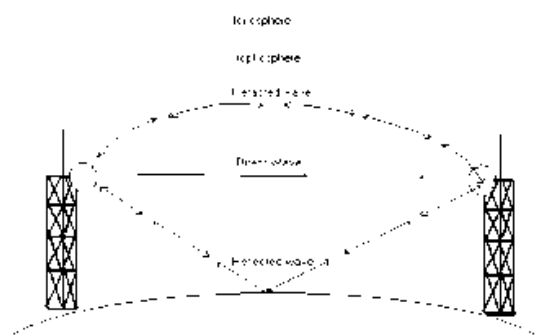


Fig. 1: The propagation of radio waves along the path

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Other considerations must be looked at in path selection. For example, with line-of-sight systems, it is the operator's responsibility to be aware of any construction plans along the path.

Light Based Systems

No single wireless technology can be 100 percent effective; each has its own limitations and strengths. Despite the technical bandwidth limitations, there are certain cost advantages and ease-of-use considerations that keep light-based systems high on the scale of acceptability in the minds of many users for a variety of applications.

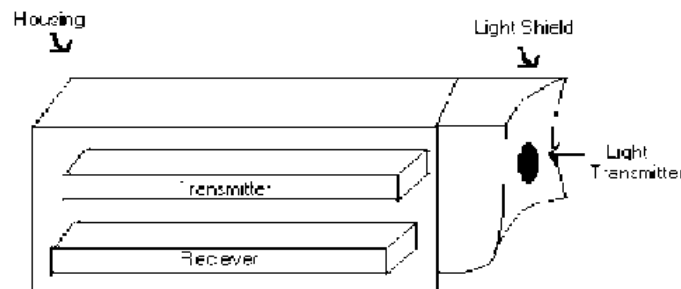


Fig. 2: The basic components of communication system

CONCLUSION

What we see today is only the beginning. There are many new and exciting systems currently being developed in research labs. The future will see more and more wireless devices, the merging of classical voice and data transmission technologies, and the extension of today's Internet applications onto wireless devices. New applications and new wireless networks will bring ubiquitous multimedia computing to the mass market; radios, personal digital assistants (PDAs), laptops and mobile phones will converge and any different functions will be available on one device.

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