

Wireless Communication Systems: Need, types and Applications

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Abstract: *Wireless Communications has a huge impact on our daily life. Wireless Communications has made the communication faster. This type of communication is much faster and less time consuming as compared to the traditional communication systems like wired communication in case of telephony. Wireless communication brought a great revolution in the field of computing and communication media. This research paper focuses on all the various important aspects of the wireless communications system.*

Key Words: *Telephony , Impact , Revolution , Computing.*

1. INTRODUCTION:

Meaning of Communication is information's transfer from source to destination (recipient). In old technology of telephony, There was a huge distance between source and recipient because they were far away from each other's and conducting wires were used for making the communication physically for passing the information with the help of electrical signals. Information's transfer between two ends without any physical connection is considered as Wireless Communication.

2. NEED:

In Traditional communication systems, various types of wires were used for making the communication between sender and receiver by using various cables like twisted pair, fibre optic or copper wire.[1] To setup such type of communication was very costly and it was very difficult to handle such type of communication system due to complexity of wires.[2] This process was very time consuming also. But, with the development of new trends and changing technologies, wireless communication system came.[3] This type of communication changed the way of information transfer by introducing various faster wireless communication methods.[4] This type of communication is more easy to use and faster as compared to wired communication system.

3. TYPES: Various types of wireless communication are:-

- **Infrared Communication:** It uses Electromagnetic energy which is known as IR for making the communication .This type of communication is used in areas where communication range is short.
- **Satellite Communication:** It uses space segment and ground segment for making communication .This type of communication is used to send and receive signal from any place on earth .
- **Mobile Communication System:** This type of systems uses cellular communication for making the communication between cell phones by using base stations and base station transceivers.
- **Broadcast Radio:** This type of communication uses radio waves which are electromagnetic signals and transmitted by antenna at various frequency ranges.
- **Microwave Communication:** In this type of communication, radio waves are used. This type of communication uses satellite or terrestrial method for making communication.
- **WIFI:** In this type of communication very low power is used. Various devices can be connected on same time by using routers. For safety purpose, passwords are also used.
- **Bluetooth:** This type of communication is used for transferring the data between various devices like smart phones or computers and keyboards etc.

4. ADVANTAGES:

There are many numerous benefits of wireless communications over wired, these are given below:-

- **Speed:** Data transfer and communication process in wireless communication system is faster than wired communication systems.
- **Cost:** The cost of wireless communication's maintenance is less as compared to wired communication system. Moreover, the installation cost is also less than wired communication.

- **Accessibility:** In case of wireless communication, to access media is easier as compared to wired communication system. So, Accessibility is more in wireless communication.
- **Helpful:** This type of communication is more convenient as compared to wired communication systems like in remote areas to connect with outside world.

5. APPLICATIONS: Wireless communication systems have numerous applications, some of them are:-

- Wireless communication systems are used in various projects where communication on higher level is required like home automated system.
- These systems are also used in various interfacing devices like wireless keyboard, wireless mouse and so on. In such type of devices it is used.
- Wireless communication is also used in remote controlled systems where infrared waves are used. For example-Television which is controlled by remote and so on.
- These type of wireless systems are also used in security based systems ,where the extra care is needed. For example defence based services.
- For setting up wifi connection ,Wireless communication is used. This makes the communication faster between multiple devices on same time.
- In various cellular systems and mobile communication systems, for making the communication among multiple devices, wireless communication is used.

6. ACKNOWLEDMENT:

While making this research paper, I have put all of my best and possible efforts for making this research paper. I hope this research paper will be useful and helpful for the authors who want to do further research in the field of wireless communication networks.

7. CONCLUSION:

With the introduction of new technologies and latest developments related to the field of computing, the communication and mode of information and data transfer improved. This is possible with the wireless communication systems which include various technologies like Bluetooth, satellite, wifi and so on. There is no doubt that wireless communication has improved the communication and mode of information and data transfer. In future there may be more new trends in the field of wireless communication systems.

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