



Satellite Communication

Course: MHOMCC-8

Dr. Rajni Pandey
Assistant Professor
MMC, Patna University
vijay.rajni3@gmail.com
9837316268

Introduction

A satellite communications is an artificial satellite that relays and amplifies radio telecommunication signals via a transponder; it creates a communication channel between a source transmitter and a receiver at different locations on Earth.

Working principle of satellite

The fundamental principle to be understood concerning satellites is that a satellite is a projectile. That is to say, a satellite is an object upon which the only force is gravity. Once launched into orbit, the only force governing the motion of a satellite is the force of gravity.

Early Satellites

- In October 1957, the first artificial satellite **Sputnik-1** was launched.
- 1963 Clark's idea became a reality when the first geosynchronous satellite **SYNCOM** was successfully launched by NASA.
- India Launched the first satellite **ARYABHATTA** on April 19, 1975.

Types of Satellites

Satellite are divided in four major categories as follow:

- **Communication Satellite.**
- **Weather Satellite.**
- **Remote-sensing Satellite.**
- **Scientific Satellite.**

Advantages

- The coverage area of a satellite greatly exceeds that of a terrestrial system.
- Transmission cost of a satellite is independent of the distance from the Centre of the coverage area.
- Satellite to satellite communication is very precise.
- Higher bandwidths are available for use.

Disadvantages

- Launching satellites into orbits is costly.
- Satellite bandwidth is gradually becoming used up.
- There is larger propagation delay in satellite communication than in terrestrial communication.

Application of satellite communication

- ❖ The main application of satellite communication is in the field of communication. The communication of video signals(TV), audio signals (telephones, satellite phones) and computer data (internet).
- ❖ To gain meteorological or weather information. The photographs taken by the satellites are analyzed for predicting weather.
- ❖ To monitor the status of earth's resources such as land, forests and oceans. We can get very important information about crops, lakes, rivers, forest fires etc...
- ❖ To spot our mineral resources, polluted areas, sources of pollution etc...

References

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THANKS