

## **Satellite Communications**

Currently, telecommunication and information infrastructures are becoming one of the most demanded resources of growth and efficiency development of the economies in most countries, and contribute to meeting the essential needs of the population in the information and communication services.

Satellite communications, one of the radio connections type, is based on the use of satellites with responders mounted on them. Satellite communication is done between the earth stations which can be both stationary and mobile.

Satellite communications is an effective and fast way to create private telecommunications infrastructure. This technology has no borders and provides the ability to connect any two points on the planet. Digital data processing algorithms allow to effectively create different channels of information, combine them with the traditional means of communication and provide access to the Internet.

The main advantages of satellite networks are the following:

- High bandwidth of the satellite due to a wide range of gigahertz frequencies;
- Connection between stations located at very large distances, and the possibility of customer service in the most remote locations;
- Independence of the cost of transmitting information from the distance between communication users;
- The ability to build a network without physically switching devices sold due the broadcast of satellite communications.

The disadvantages of satellite communication networks:

- The need for cost and time to ensure the confidentiality of data, to prevent the possibility of data interception "foreign" stations;
- The presence of the delay signal reception by the ground station due to the large distances between the satellite and the RTS;
- The possibility of mutual distortion of radio signals from ground stations operating on adjacent frequencies;
- Exposure to signals on the land-to-satellite and satellite-to-ground impact of various atmospheric phenomena.

To sum up, for modern organizations it's important to have access to high-quality switching nodes, i.e. to all the important lines of communication. In countries where the distances between settlements is great and the quality of landlines is poor, the optimal solution of this problem is the use of satellite communications.