COMMUNICATION AND BROADCASTING SATELLITE SYSTEMS
ON THE THRESHOLD OF THE THIRD MILLENNIUM

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The state-of-art and future prospects of development of satellite systems for communication and broadcasting in Ukraine are discussed.

The satellite communication is economically sound when linking different continents and remote areas. Within the limits of a single satellite “leap” (up to 10 thousand kilometers) the cost of a satellite communication channel does not depend on its length while in the case of earth systems the channel cost grows in proportion to distance. When setting up international communications systems based on satellite technologies, there is no need in transits along the third country territories. The systems of satellite communication make it possible to meet urgent needs in communications by prompt switching some channel groups to other directions depending on schedule changes, to arrange efficient linking in the case of natural disasters and catastrophes, to create back-ups to ground-based channels, etc.

The present-day technologies of satellite telecommunications ensure flexibility when setting up networks for public agencies and business communications, computer networks scattered across vast areas, and make it possible to provide simultaneously several kinds of services by a single satellite communication station. In recent years we also face intensive development of mobile satellite communication facilities, and of personal radio-call equipment. These forms of communication are considered a complement to the cellular systems of mobile and stationary ground-based radio communications in areas beyond the reach of this type of services. The mobile satellite communication now gains significance because of expected operation in 1999–2002 of the global systems using low-orbit transmitters. Based on the terminals of mobile satellite communication it is also possible to deploy the telephone communication networks in the form of trunk-call offices or public telephones in rural areas where establishment of telephone channels by other means is inexpedient from economical standpoint. In addition, the satellite communication facilities are able to satisfy growing needs in separation and exchange of TV and audio broadcasting programs.

The world community on the threshold of the third millennium enters the era of intensive development of information technologies. In order to cope with huge volumes of information, both earth and space telecommunication facilities are now in place. After 30 years of developing geostationary orbits we have a wide stock of satellite systems of high-quality communication and broadcasting which make a significant contribution to the whole volume of telecommunication services.

INTELSAT is the largest international organization of satellite communications acting in more than 175 countries. The total space segment of the INTELSAT system consists of 140,000 equivalent telephone channels. The artificial earth satellites (AES) belonging to this system are clustered in three main zones of the geostationary orbit: above the Atlantic, Indian, and Pacific oceans. At the moment the geostationary orbit has 19 retransmitting INTELSAT satellites. At least 14 satellites are seen from Ukraine’s area permitting direct communication with the states of North and South America, Africa, Southeast Asia, and Australia.

Among the whole diversity of services most interesting is the service of international digital retransmission IDR with the range of speeds from 64 Kb/s to 45 Mb/s. The service is used for setting up international links: transmission of telephone calls, data, TV programs in digital form, ISDN networks, etc. In recent years the DAMA networks have been introduced...
REFERENCES


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