CONTENTS

7. Satellite systems

VSAT networks allow building up of communications networks for transmission of data, audio and video information, including the remotest areas. This technology gives great opportunities for implementation of dialog applications for training, control, file transfer, video conferences and other multimedia applications. The advantages of the VSAT networks are various and some of the most important ones are: cable routes are not used, which makes them independent in cases of failures; provide, according to the needs of the customer, communications channel to each client subnetwork; assure high level of security and reliability.

In 2005 two new operators of telecommunications networks under individual license No 112 for carrying out telecommunications through public telecommunications network in the fixed satellite service were licensed: BULGARIAN NATIONAL TELEVISION (holder of two licenses) and HUNGARO DIGITEL OOD. In 2005 one more license was issued to TRANSAT AD and TELENOR BULGARIA EOOD, and two more – to NETERRA EOOD. At the end of the year eight of the ten operators declared to have carried out commercial activities.
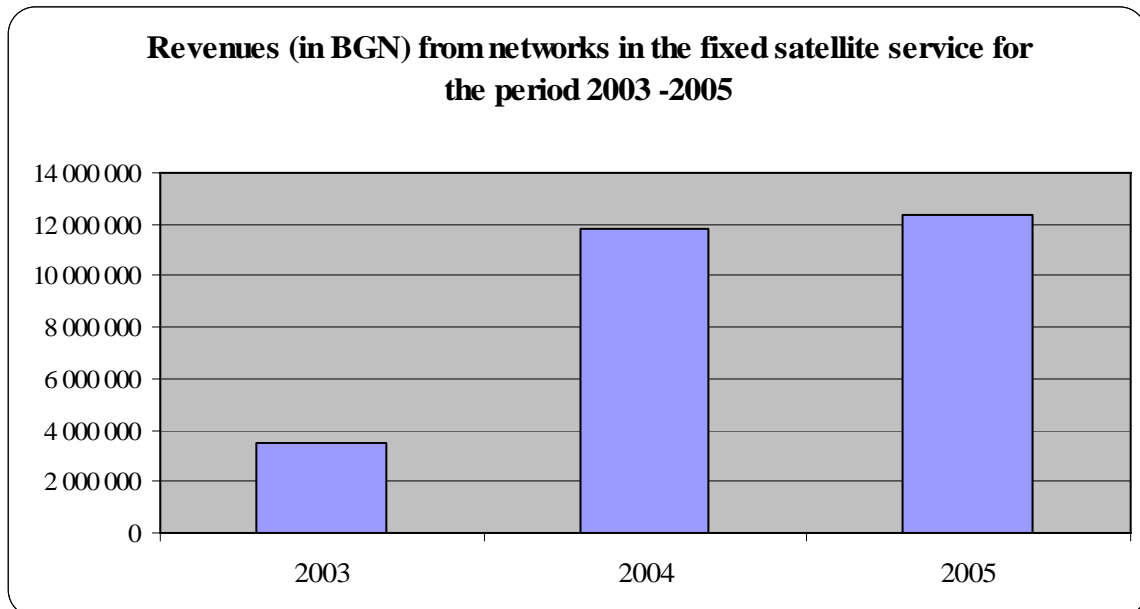
NETERRA OOD is quite experienced, having installed over 50 VSAT stations, while the company has at its disposal a technical team that is able to realize such projects. NETERRA fully doubles its terrestrial services through the telecommunications equipment SOFIA TELEPORT that is one of the most contemporary centers for satellite communications in South Eastern Europe, from where by satellite the programmes of bTV, RADIO GONG and DARIK RADIO are broadcasted.

In 2004 BULSATCOM AD and INTERACTIVE TECHNOLOGIES AD under the brand name of ITV Partner have started activities under the issued individual licenses and have strengthen their positions in the supply of satellite digital television on the Bulgarian market. BULSATCOM AD offered to its subscribers two packages of digital programmes: *Economical*, including 13 programmes and *Standard*, including 21 programmes more. ITV Partner offers to its customers four packages: ITV Gold (basic one), ITV Full, ITV X and ITV XFull. Both operators offer to the clients Pay Per View service, allowing demand of films and programmes from home. The customer uses the service against additional payment and sending a SMS could activate it.

At the moment TRANSAT AD has built for its clients communications networks based on the broadband VSAT platforms SkyStar 360E and FaraWay which cover over 650 localities on the territory of Bulgaria, Europe, Middle East and North Africa. The VSAT network based on Skystar 360E allows dynamic distribution and management of the traffic through separate terminals, groups or sub-groups of terminals within the total capacity provided according to the requirements of the customer. The network management system assures means for monitoring and control to the customers, statistical data, configuration and generation of inquires. FaraWay is a platform for multiplexing and commutation of communications channels on demand by the customer. It supports voice, fax and data, as well as all the related services. It connects telephone terminal equipment, telephone switches, local corporate networks, wireless local networks (WLAN), base stations of mobile operators, satellite equipment for data.

In 2005 TELENOR BULGARIA EOOD keeps offering satellite broadcasting of radio and television programmes on the territory of Bulgaria, Central and Eastern Europe. The satellite broadcasting of radio and television programmes is carried out through Thor III satellite and MPEG-2 coding is used, enabling high quality of the audio and video transmission, as well as opportunity for additional audio and text services. The customers of the operator are Bulgarian and foreign television operators.
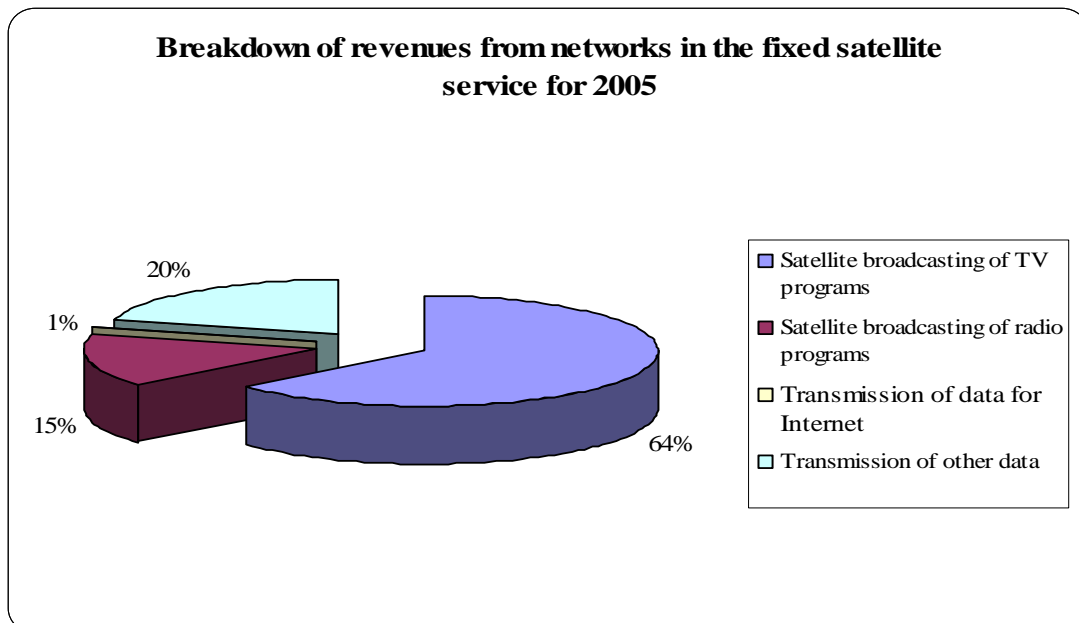
The volume of the market segment of networks in the fixed satellite service in 2005 amounts to 12,4 mln. BGN and has grown by 5% in comparison to 2004. The growth of the segment is much less than the one of 2004 compared to 2003, which could be explained by the fact that for 2005 BTC have declared not to offer VSAT services.

Revenues (in BGN) from networks in the fixed satellite service for the period 2003 -2005

Source: Data submitted to CRC

Figure 82

The chart below shows the breakdown of the revenues by types of services, provided through the licensed VSAT networks.

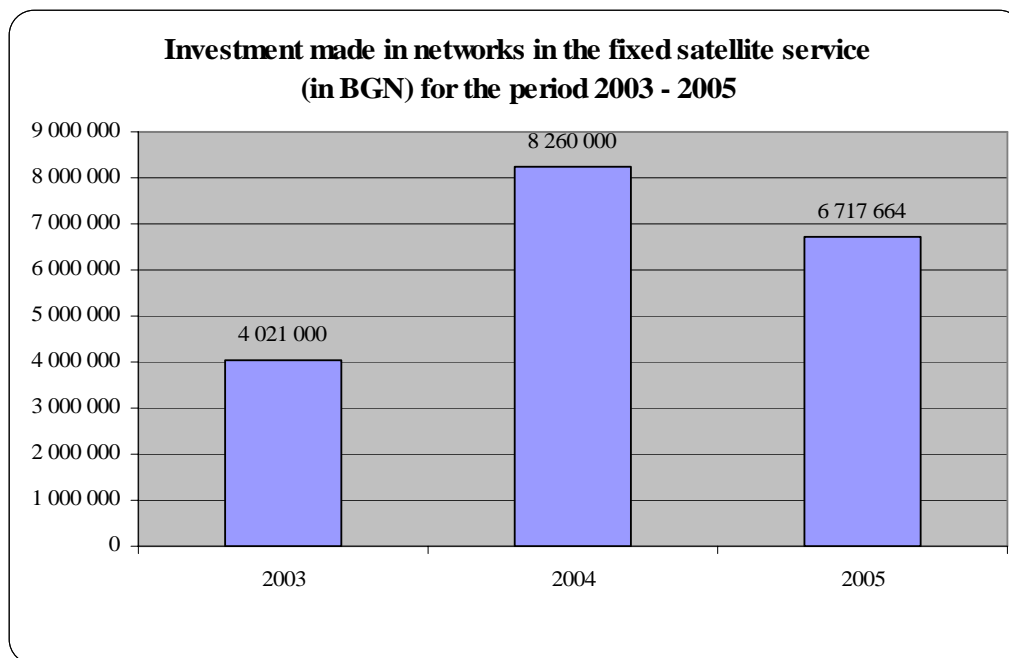**Breakdown of revenues from networks in the fixed satellite service for 2005**

Source: Data submitted to CRC

Figure 83

The greatest part of the revenues have been realized through satellite broadcasting of television programmes – around 64% of the total, which together with the revenues from

broadcasting of radio programmes represent around 80% of the total segment. The revenues from data transfer and Internet represent just 1%.

The operators have declared 6,717 mln. BGN investment in networks in the fixed satellite service in 2005, what is by 19% less compared to 2004.

Investment made in networks in the fixed satellite service (in BGN) for the period 2003 - 2005

Source: Data submitted to CRC

Figure 84

It could be expected that the volume of this market segment will keep on growing in the next years as the satellite systems are strengthening their positions as an alternative technology to the existing terrestrial cable and radio networks.
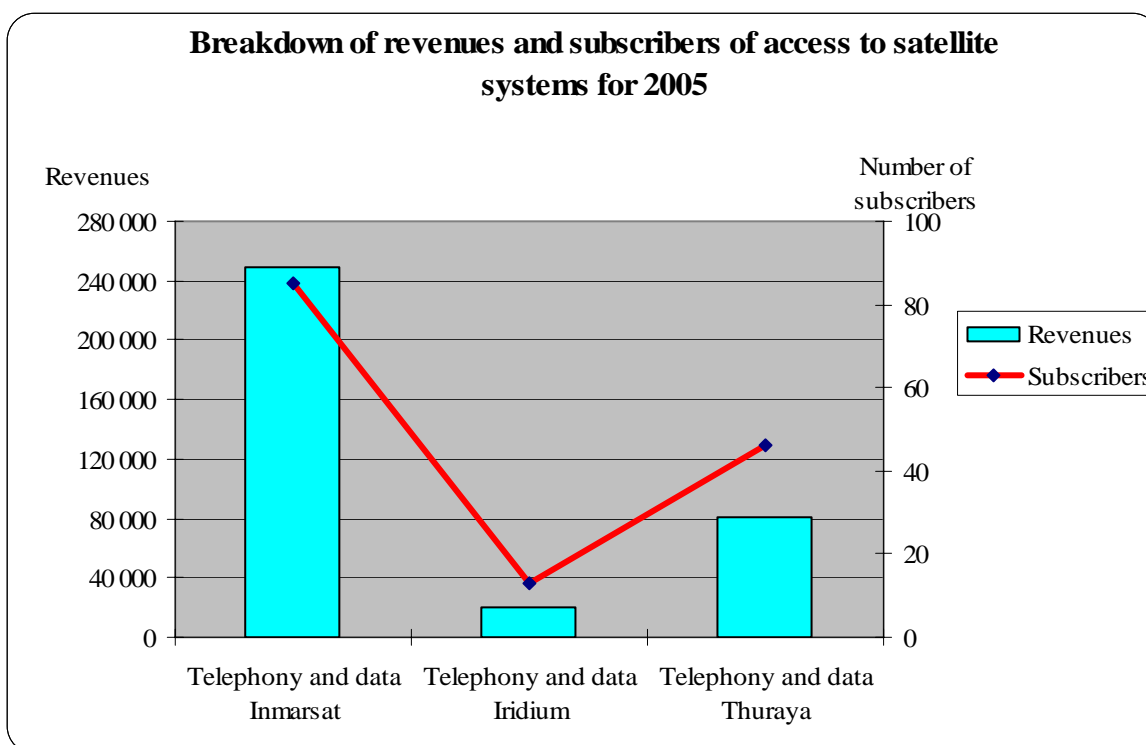
Access to satellite systems

In 2005 CRC has issued one authorization for registration under general license No 216 for provision of the telecommunications service – access to satellite systems to ET SKU – JULIA LAZAROVA, but the operator has stated not to provide services in 2005. The only operator carrying out activities in 2005 is SCORTEL OOD, which was registered in 2004. The company has strengthened its positions in the field of telecommunications in our country.

The activities of SCORTEL OOD are focused in the area of communications technologies: provision of equipment and services for mobile satellite communications in Inmarsat, Iridium and Thuraya systems; GPS management of transport vehicles (automobiles, ships, airplanes) and system integration of information management systems for the public transport based on GSM/GPRS networks. Partners of SCORTEL OOD are the satellite operators Telenor (Norway), Xantic (Netherlands) and MVS (USA). The company is a distributor of satellite and maritime equipment companies such as Thrane&Thrane, RCN-Conti, KVH Europe, Navicom, Samyung. SCORTEL OOD has implemented fleet tracking and management systems for corporate clients such as Bulgarian National Bank, Emergency centers and many others. During its 12-year-long period of activity SCORTEL OOD is a supplier of communications equipment and services, consulting and engineering services for the following Bulgarian companies and organizations: Ministry of transport and communications, Ministry of Interior, Ministry of Defence, Ministry of Health, Ministry of

Environment and Water in Bulgaria, Navigation Maritime Bulgare, Bulgargas, Bulgarian National Bank, Bulgarian National Television, State Agency For Civil Protection, Military Medical Academy and other.

According to data submitted to CRC, around 71% of the revenues generated by SCORTEL OOD in 2005 are from provision of Inmarsat communications services, around 6% - from provision of communications services for access to Iridium and the rest – from access to Thuraya. The distribution of the revenues and subscribers by services provided by SCORTEL OOD is presented in the chart below (Figure 85):

Breakdown of revenues and subscribers of access to satellite systems for 2005

Source: Data submitted to CRC

Figure 85

Iridium is a project using low-earth orbital satellites, which are constellations of comparatively small satellites, orbiting at a lower height compared to the geostationary systems. The Iridium network consists of 66 cross-linked satellites and has multiple in-orbit spares. The technology allows full implementation of the programming solutions and comutating computers on the satellites. The aim is development of global network solution for satellite voice, fax and data transmission.

It could be expected that the importance of the satellite services would grow significantly worldwide, having in mind the trend of convergence of networks and services, regardless of the territorial location of the users.