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VIII. COMMUNICATIONS CONTROL

One of the main priorities of CRC through the year was the reinforcement of the control activity as a regulatory mechanism for non-discrimination of the operators and for effective observance of the requirements for quality and safety of the provided services. To this end special attention was devoted to the execution of the supervisory functions of the Commission for compliance with the requirements of the Telecommunications Act (TA), the Postal Services Act (PSA) and the Law on Electronic Document and Electronic Signature (LEDES). These functions are carried out by the units in the capital and by the five regional offices in the cities of Plovdiv, Burgas, Varna, Veliko Tarnovo and Vraca.

In order to increase the efficiency in exercising the control the earlier developed and approved by CRC National system for monitoring of the radio frequency spectrum (RFS) for civil purposes on the territory of the Republic of Bulgaria was updated in 2006.

The communications control activity is performed in the following directions:

- ◆ Monitoring and control of the RFS for civil purposes:
 - Monitoring by means of **fixed attended** monitoring **stations** – in the cities of Sofia, Varna, Vraca and Plovdiv;
 - Monitoring by means of **fixed non-attended** monitoring **stations** – in the cities of Veliko Tarnovo and Burgas;
 - Monitoring by means of **mobile and portable** monitoring **stations** – on the territory of the entire country.
- ◆ Communications inspection:
 - Communications inspections concerning carrying out telecommunications according to the provisions of the TA;
 - Communications inspections concerning the provision of postal services according to the provisions of the PSA;
 - Communications inspections on the compliance with the requirements of the LEDES.
- ◆ Logistics of the control activity:
 - Logistics and support for the monitoring and control of the RFS;
 - Logistics and support of the inspection activity.

1. Monitoring and control of the radio frequency spectrum for civil purposes

The control of the RFS for civil purposes in 2006 was aimed at ensuring non-discrimination of the legal users of RFS and guaranteeing specified quality of the telecommunications services provided to the end users through execution of the following more important activities:

- ◆ Control for the observance of the **rules for use of the radio frequencies and the radio frequency bands** for civil purposes; implementation of the policy for management of the radio frequency spectrum and the clauses of the individual licenses;
- ◆ Monitoring for evaluation of the actual **occupancy of radio frequency spectrum** and estimation of the available capacity for assigning new frequencies – monitoring is performed of the radio frequency ranges allocated for: networks for broadcasting of radio and television signals, private networks (PMR), public mobile cellular networks under the standards TETRA, NMT, GSM, UMTS etc. in over 50 settlements on the territory of the whole country;
- ◆ Monitoring and measurements for evaluation of **trans-border interference** in the radio frequency ranges for terrestrial broadcasting of radio and television signals – measurements are conducted in 30 settlements, located in the border areas of the country; for the Black sea area three measurements are performed per each investigated settlement (two of them in the summer season) and in the rest of the border settlements – two measurements for each settlement;
- ◆ Assessment of the **electromagnetic compatibility** of the broadcasting transmitting stations in the band 87.5–108.0 MHz with the radio navigation and communication equipment of the aeronautical services – 9 civil radio transmitter sites are examined in 8 settlements (Blagoevgrad, Varna, Veliko Tarnovo, Vidin, Plovdiv, Smolian, Sofia and Stara Zagora);
- ◆ Control of the **radio transmitting equipment** in order to inspect the observance of certain technical and operational characteristics of the transmitted signals – inspected are the main technical parameters of transmitting stations for sound broadcasting on the territory of the entire country as well as parameters of other transmitting stations in connection with occurred radio interference or during inspection of compliance with the conditions of the granted licenses;

- ◆ Control measurements of the coverage and the quality of the services provided by the public telecommunications **mobile cellular networks under the GSM standard** – measurements have been conducted in 121 settlements on the territory of the whole country for the three mobile operators, including main directions of the road network of the Republic (Sofia – Kazanlak - Dimitrovgrad, Sofia – Pernik – Kiustendil, Sofia - Blagoevgrad – Kulata, Sofia – Shumen – Varna, Sofia – Sliven – Burgas, Sofia – Ruse – Silistra, Silistra – Durankulak – Varna – Burgas – Malko Tarnovo, Sofia – Goce Delchev – Dospat – Smolian – Momchilgrad – Svilengrad, Sofia – Montana – Vidin) and some secondary directions;
- ◆ Inspections for **compliance** of the constructed transmitting stations for broadcasting of radio and television signals **with the approved technical projects** – 198 transmitting stations (131 for broadcasting of radio signals and 67 for broadcasting of television signals) have been inspected;
- ◆ Monitoring for finding, localizing and identifying of **sources of interference** in connection with submitted complaints and signals of legitimate RFS users, citizens, organizations and authorities - a total of 130 cases, about 50% of them for interference to private mobile networks (74 complaints), 33 for interference to the broadcasting of radio and television signals and 23 for interference to public mobile networks.

The RFS monitoring was aimed at undertaking **preventive measures** for the effective and interference-free utilization of the spectrum for civil purposes and ensuring the electromagnetic compatibility of the radio equipment. An initiative started from the middle of the year to provide to the operators of telecommunications networks for analogue terrestrial sound broadcasting data with the results of the monitoring measurements of the basic technical parameters of the transmitting radio stations. The data was provided electronically to the operators on a monthly basis. The initiative enjoyed broad acclamation and led to improving of the technical and operational parameters of the transmitted signals.

A total of 5095 measurements protocols have been prepared during the performed monitoring and control of the RFS in 2006:

- ◆ 4914 measurement protocols - in connection with Decisions of CRC, for the purposes of spectrum management and planned RFS monitoring;
- ◆ 181 measurement protocols – in connection with submitted complaints and signals for interference.

2. Inspection activity

In connection with the functions of the Commission related to the control over the provision of telecommunications according to stipulations of the TA, the control over the supply of postal services according to the provisions of the PSA as well as the control over the compliance with the requirements of LEDES the following variety of activities was executed in 2006:

- ◆ Bringing the telecommunications **networks for terrestrial broadcasting** into compliance with the provisions of the law. 215 inspections of operators of this telecommunications activity have been performed. The inspections have been executed both following Decisions of CRC for approved projects of the transmitting radio stations and regarding the compliance with the Ordinance for the rules of procedure and technical parameters for the operation of the Broadcasting service (The Ordinance) (SG, No.76/2004) and the terms of the individual licenses. All radio transmitting stations use antenna systems with two or more layers and vertical polarization according to the requirements of Article 19, paragraph 3, item 2 of the Ordinance. An ever greater percentage of the radio transmitters have an additional subsystem „limitation of deviation” according to the requirements of Article 19, paragraph 3, item 3 of the Ordinance. The inspections established that 79% of the radio transmitter stations do not have installed directional couplers for conducting measurements. The term for their installation expires on the 01.07.2007 according to the Ordinance. Compared to previous years a positive trend for compliance with all the requirements of the individual licenses is observed during the inspections which is a direct result of the constructive dialog between inspectors and operators. 9 complaints have been administered for the period related to the quality of the transmitted radio programs. 26 statements of established violations have been drawn up.

- ◆ 88 inspections of the telecommunications **networks for terrestrial television broadcasting** have been performed. No violations leading to administrative-penal responsibility of the operators have been established.

- ◆ The rapidly developing process of concentration of the public **cable telecommunications networks** for distribution of radio and television signals and provision of telecommunications services through them

led to the restructuring of this telecommunications market segment and to a bigger number of the provided services in the large cities. The coverage of small settlements with this type of networks has also increased. A total of 297 inspections have been conducted during the year, which have been closed with drawing up of 53 statements for administrative violation. 50 complaints of end users have been received related to the quality of the provided services, their prices and the legitimacy of the networks.

In connection with the Memorandum for cooperation regarding the protection of the copy right and neighbouring rights between the Ministry of culture, CEM and CRC, 33 statement records from conducted inspections of operators, carrying out telecommunications through public cable telecommunications networks, have been forwarded to the Ministry of culture as the competent body. On the basis of penal decrees into effect of the Ministry of culture 5 statements for violation of the terms of General license No. 201 have been drawn up in connection with the requirements of the Law on Copyright and Neighbouring Rights.

◆ In connection with the effective use of the scarce frequency resource 468 inspections have been conducted for fulfilment of the terms of the individual licenses for construction, maintenance and use of **private mobile networks - PMR**. These inspections resulted in licenses revoked due to established inefficient use of RFS and release of much needed radio frequency channels. As the main violation for this type of networks remained the transmission with higher power and very often faulty radio equipment causing interference to the networks of other licensed telecommunications operators. 62 complaints for interference have been received and as a result of the inspections it has been localized and removed. 21 statements of violation of the TA have been drawn up for established violations.

◆ 15 inspections have been carried out of operators performing telecommunications through **networks of the fixed satellite service**. Two statements for non-fulfilment of the terms of the license have been drawn up - change in the frequency of the transmitting channel.

◆ 117 inspections of public telecommunications **data transfer networks without use of scarce resource** have been realized. When inspecting this type of public telecommunications networks documents are mandatory required on the technical safety of the network, which in turn guarantees also the technical safety of the end users. The subscribers of internet networks, if the networks are without earth, have no protection at all during thunder storms, since an explicit text in the general conditions of these operators obliges the subscribers to switch off the computers and pull out the cable for the internet connection during storms, which is not a contemporary technical solution. Unfortunately this is subject of the contracts with the consumers and the General conditions of the operators, which they are signing, that is why CRC has no authority to express an opinion in such cases.

When it is established during inspection of a telecommunications network, a LAN network in particular, that the network does not have an authorization and right for construction works according to LST, the Commission notifies the DNCC sending the protocols for establishing the violation and the accompanying documents. As a result of the joint action of the CRC inspectors and the DNCC employees a significant number of illegally constructed networks were demounted. 42 statements of established violations of the law and non-execution of a Decision of the Commission have been drawn up to operators providing services through this type of networks.

◆ 36 inspections have been performed of telecommunications networks in the **fixed service of the type "point-to-point"**. One statement for established violation of the individual license has been drawn up.

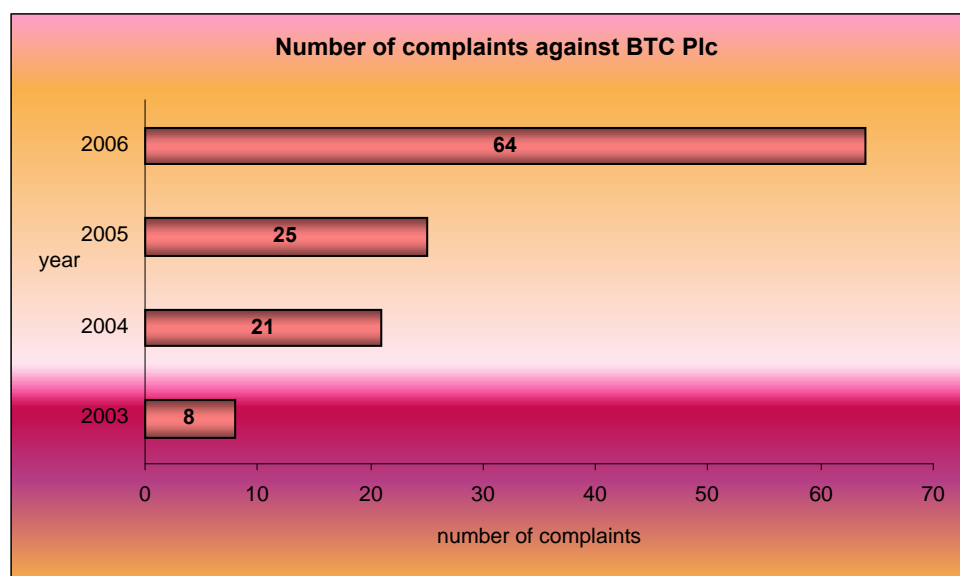
◆ 6 inspections have been performed of operators providing **access to voice telephony service through public pay-phones**. They were aimed at the quality of service provided to users from different groups of disabled people through public pay-phones, as well. Executing the activities related to the protection of consumers the experts have drawn up two statements for non-compliance with the terms of General license No. 204 (SG, No.56/2004).

◆ During 16 inspections of public **networks of the mobile service - RLAN** have been drawn up 10 statements for violation of the TA.

◆ In 2006 continued the disturbances related to damages of telecommunications networks and interruption of the telecommunications. A total of 19 records of findings have been submitted to CRC by the BTC Plc branches for cut off telecommunications cables and 22 statements for the established violations have been drawn up. Compared to the previous year when the records were 104 one can observe a trend for decrease of this type of violations irrespective of the fact that the municipalities of most of the settlements do not have cadastre of the location of the underground communications. In 2006 we have again the largest number of such violations in the region of Plovdiv followed by the region of Veliko Tarnovo.

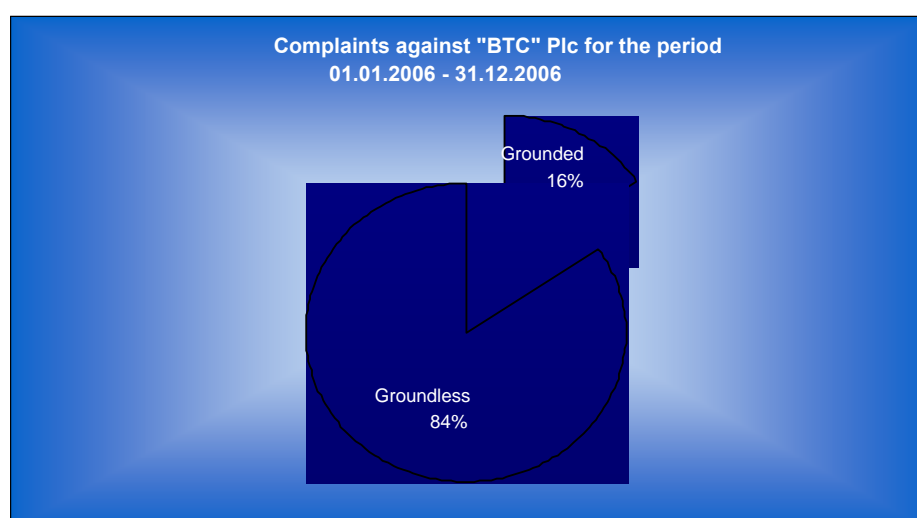
◆ The inspectors of the Commission have performed 52 inspections for the observance of the license terms by the operators of **fixed voice telephony service**. The parameters of the quality of the fixed voice telephony service provided by the operators to the consumers were measured during these inspections. At the moment of the inspections 50% of the licensed alternative operators have not started their telecommunications activity yet.

◆ CRC determined once again with Decision No. 1742 /12.09.2005 BTC Plc as an operator with significant power on the market of fixed telephone networks and provision of fixed telephony services and imposed on the company specific obligations for provision of Universal Telecommunications Service (UTS) as envisaged by the law. 64 complaints against BTC have been received in the Commission for the period from 01.01.2006 to 31.12.2006 concerning the provision of UTS. In comparison with the last four years we have a greater number of complaints against the dominant operator on the fixed voice service market although 84% of the complaints for the present period are groundless.



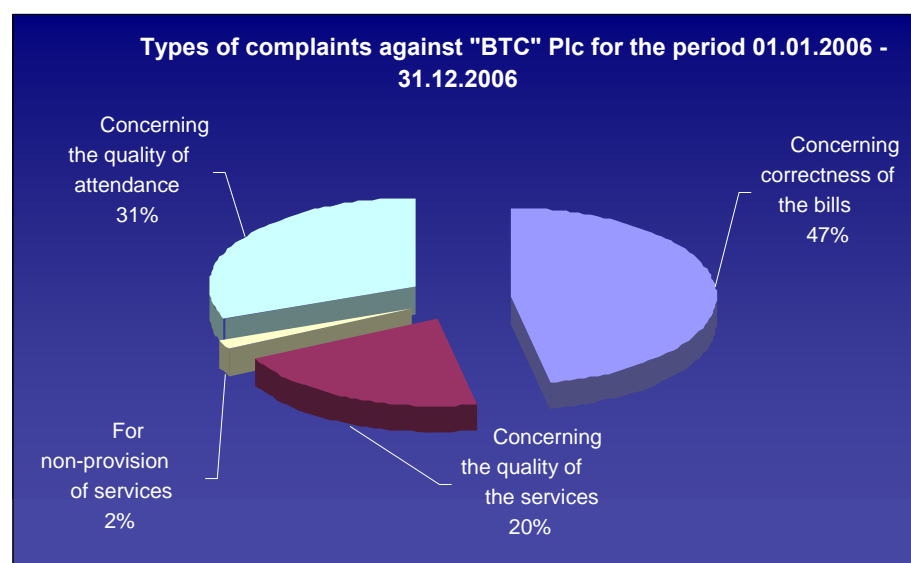
Source: CRC data

Fig. 91



Source: CRC Data

Fig. 92



Source: CRC data

Fig. 93

After inspections following complaints of disabled and socially disadvantaged citizens, the Commission adopted Decision No.140/19.01.2006, obliging BTC to provide a detailed bill for the used services to the home addresses of subscribers using social packages – plan for disabled persons, economical

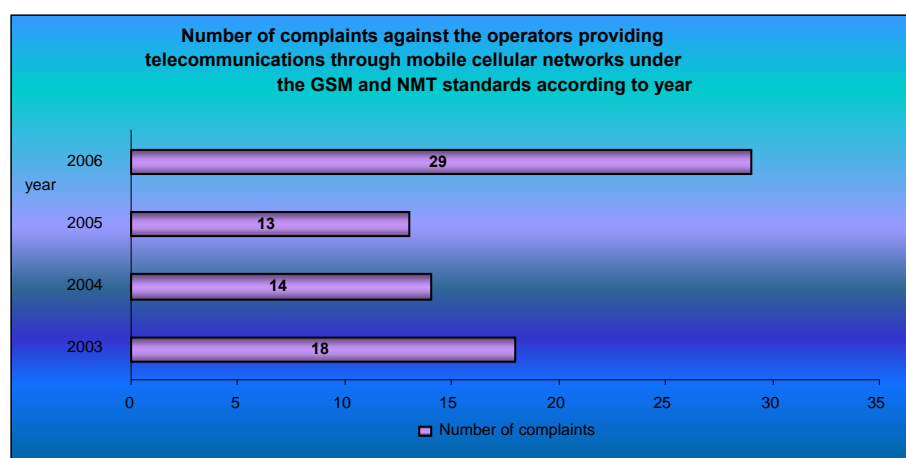
plan and plan for limited use. After conducted by experts inspection in 17 villages of the Tran commune, BTC took measures to improve the universal telecommunications service by preparing a project for rehabilitation and repair of the aerial circuits in these settlements. The project shall be concluded at the end of July 2007.

From 01.01 to 31.12.2006 a series of requests has been addressed to CRC by telecommunications operators with the plea to impose on BTC Plc the envisaged by the law obligations for shared use of ducts from the duct network of the former state monopolist. These requests are concerning 104 cable routes, 95 of which are on the territory of Sofia, 6 - on the territory of Burgas and 3 cable routes on the territory of Stara Zagora. It has been established during the performed inspections that for 20 of the routes, for which the operators have received refusal or have not received any response from BTC Plc the physical and technical possibility exists to lay cables. In connection with this the Commission has given mandatory instructions to BTC to provide these 20 cable routes for shared use.

A total of 155 inspections have been conducted during the year concerning the observance of the terms of the individual license issued to BTC Plc and 9 statements for established administrative violations have been drawn up.

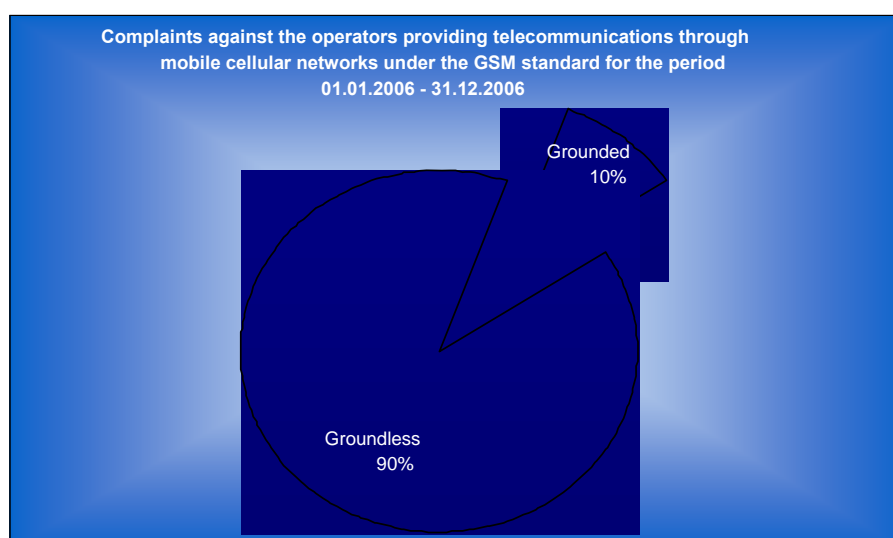
♦ Three operators provide telecommunications on the territory of our country through public **mobile cellular networks under the GSM standard** – „MOBILTEL” Plc, „COSMO BULGARIA MOBILE” Plc and „BTC MOBILE” Ltd as well as one under the **NMT standard** – “RADIO TELECOMMUNICATION COMPANY” Ltd.

A total of 29 complaints have been received through the year in the Communications Regulation Commission against these operators, their number has increased compared to the three previous years however 90% of them were groundless. There has been no complaint received in 2006 against „RADIO TELECOMMUNICATION COMPANY” Ltd.



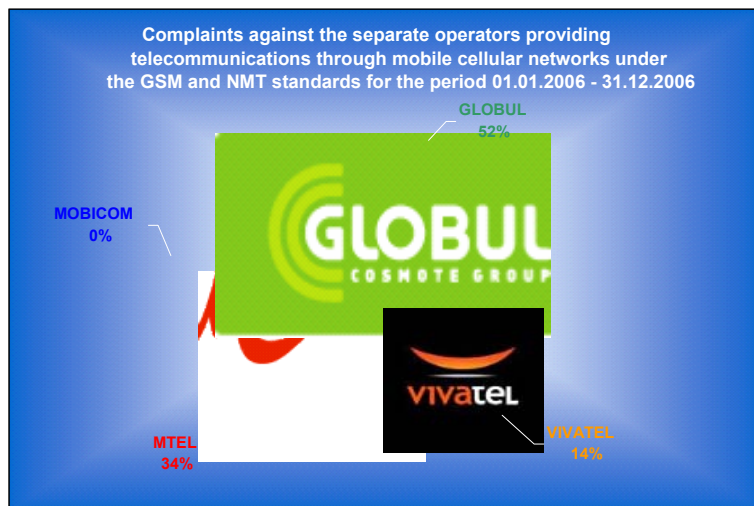
Source: CRC data

Fig. 94



Source: CRC data

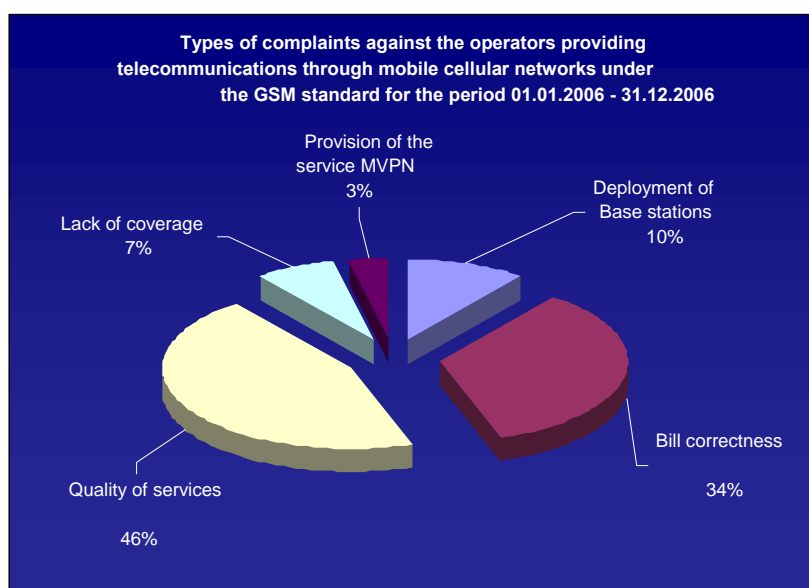
Fig. 95



Source: CRC data

Fig. 96

The biggest percentage of the submitted complaints is about the correctness of the bills followed on the second place by the quality of services and least are the complaints concerning the coverage of the networks. The reasons for these complaints are different such as for example restriction of the outgoing calls of subscribers with prepaid services cards, delay of connecting to the network, not received monthly invoices etc.



Source: CRC data

Fig. 97

During the conducted inspections of the operators providing telecommunications through mobile cellular networks under the GSM and NMT standards 34 statement records and 3 SEAV (Statement of Established Administrative Violation) have been drawn up.

In execution of the requirements of the TA, as a result of the conducted inspections 211 statements have been drawn up and handed for 211 established administrative violations.

◆ In connection with submitted signals and complaints for the provision of **universal postal service** by the principal postal operator "BULGARIAN POSTS" Plc 13 inspections have been conducted. No violations of the PSA or of the terms of the individual license issued to BP Plc have been established. An inspection is also executed of „FACTOR I.N." Plc, the second licensed operator for provision of part of the universal postal service.

◆ 33 statement records have been drawn up during 28 inspections concerning compliance with PSA of operators, **registered for provision of non-universal postal services**. 3 SEAV have been drawn up for violations of the PSA. One violation is established by a non-universal postal service operator related to UPS provision without a license, for which administrative punitive liability is engaged and a SEAV has been drawn up. In 2006 inspections have been also performed of 7 companies, which advertise their courier activity on the internet. One SEAV has been drawn up. Three of the companies have ceased activity and other three act as agents of „DHL" and „IN TIME" Ltd.

- ◆ 10 complaints have been submitted throughout the year for the application of the PSA and as a result one SEAV has been drawn up.

- ◆ In compliance with the approved timetable for executing inspections of the certification services providers (CSP), registered according to the **Law on Electronic Document and Electronic Signature (LEDES)** and in compliance with the approved by CRC Methodology for control of CSP, 2 inspections have been conducted during 2006 of the work of „BANKSERVICE” Plc and „INFORMATION SERVICES” Plc.

3. Logistics of the control activity.

The logistics of the control activity in 2006 developed in the following main aspects:

- ◆ Construction in stages of the National monitoring system;
- ◆ Analysis of the available and necessary hardware and software equipping in order to perform the control activities;
- ◆ Technical support for the specialized technological equipment (fixed, mobile and portable monitoring stations; portable measurement equipment, the LAN and WAN networks of the National Monitoring System) – configuring, adjustments, administration;
- ◆ Methodological help for the execution of the operational tasks for measurements, related to the RFS monitoring and the inspection of the communications;
- ◆ Participation in the preparation of opinions on operators’ methodologies.

The implementation of the short-term plan (2007) for construction of the National monitoring system, approved by CRC, was completed through the year:

- ◆ After the respective research, measurements and analysis the location of two new unattended fixed monitoring stations in the frequency range from 20 MHz to 3 GHz has been defined for the regions of the Plovdiv and Burgas districts. They are to be constructed and put into operation during the next year.
- ◆ A LPP procedure has been conducted, finalized with a Supply Contract for 2007 of Mobile Monitoring Station up to 3 GHz. The station is intended for the “Plovdiv” Regional Unit.

The delivery, installation and putting into operation of a measurement module for DVB-T system television signals has been performed, which has been integrated into the Mobile Measurement Station for GSM networks/digital television DVB-T.

6 SHF power meters up to 26 GHz have been procured after successfully concluded procedures as well as 2 small off-road vehicles. The devices are intended for on-site power measurements at the operators. As a result all of the regional units of the directorate already have at their disposal equipment for execution of their control activity in the SHF range up to 26 GHz.

Towards the end of 2006 CRC utilizes in executing its control functions the following operational technological measurement systems:

- ◆ 7 Fixed Stations (4 attended and 3 unattended), connected to the network of the National Monitoring System;
- ◆ 9 Mobile Stations (8 for monitoring up to 3 GHz and 1 for measurements of GSM networks/digital television DVB-T);
- ◆ 2 Portable Stations for the frequency range from 1 to 26.5 GHz;
- ◆ 19 portable measurement devices for RFS monitoring.