III. MANAGEMENT OF SCARCE RESOURCES

1. Frequency spectrum

CRC manages the frequency spectrum for civil needs in accordance with its powers, by following the main goals of LEC and observing the principles for its application.

The Commission promotes the entering of new technologies and creates conditions for a competitive electronic communications market, by following the main goal for management of the frequency spectrum, namely the provision of conditions for harmonized and effective use of the frequency resource, taking into account the interest of the business and the end users in the continually appearing new communication and information services.

In order to implement the decisions and recommendations of the European Commission and the Electronic Communications Committee to the European Conference of Postal and Telecommunications Administrations, and to provide conditions for a harmonized and effective management of the frequency spectrum, CRC amended and supplemented the following secondary legislative acts related to the management of the frequency resource:

- Technical requirements for the operation of land mobile networks and the related equipment;
- Technical requirements for the operation of electronic communication networks from the broadcasting service and the related equipment;
- General requirements for provision of public electronic communications;
- Rules for carrying out electronic communications for private needs via radio equipment using frequency spectrum which does not need to be individually assigned;
- List of radio equipment that uses frequency bands harmonized within the European Union and the terminal electronic communication devices.

1.1. Allocation, planning, assignment and effective use of the frequency spectrum

The Commission amended and supplemented the Technical requirements for the operation of land mobile networks and the related equipment, which aims to transpose the provisions of Directive 2009/114/EC of the European Parliament and the Council for the amendment of Council Directive 87/372/EEC on the frequency bands to be reserved for the coordinated introduction of public pan-European terrestrial cellular digital mobile communications in the Community, and the provisions of Decision 2009/766/EC of the European Commission regarding the harmonization of frequency bands 900 MHz and 1800 MHz for terrestrial systems capable of providing pan-European electronic communication services in the Community. The amendment and supplement added the conditions for the operation of land mobile networks – UMTS in frequency bands 900 MHz and 1800 MHz. Amended were also the authorizations issued to the three undertakings for the use of individually assigned scarce resource – radio frequency spectrum for the provision of public electronic communications via land mobile networks – GSM, thus expanding the rights of the undertakings to use the spectrum assigned to them not only for GSM network but also for, or only for, UMTS. In this way, the use of radio frequency spectrum in bands 900 MHz and 1800 MHz was liberalized.

In 2010, CRC carried out public consultations regarding the prospects for use of the available resource of frequency bands 420 MHz and 460 MHz. This resulted in the amendment and supplement of the Technical requirements for the operation of land mobile networks and related equipment, by adding conditions for the use of frequency band 420 MHz by land mobile networks – PMR/PAMR, and of frequency band 460 MHz by land mobile networks –

PMR/PAMR and CDMA – PAMR.

The amendment of the Technical requirements for the operation of electronic communication networks of the broadcasting service and the related equipment simplified the procedure of the change in parameters of the television transmission stations stipulated in authorizations for terrestrial analogue broadcasting with national coverage. This was carried out with a view to facilitating the transition from analogue to digital television and observing the deadlines for developement of networks for terrestrial digital television broadcasting envisaged in the Plan for the introduction of terrestrial digital video broadcasting (DVB-T) in the Republic of Bulgaria. The same amendment introduced a requirement for undertakings to ensure continuity of the broadcasting of radio and television signals in order to promote the efficient use and management of scarce resources.

With the adopted amendment and supplement to the General requirements for the provision of public electronic communications, the provisions of Decision 2010/166/EU of the European Commission for harmonized conditions for use of the radio spectrum for mobile communication services on board vessels (MCV services) in the European Union, and Recommendation 2010/167/EU of the European Commission on the authorization of systems for mobile communication services on board vessels (MCV services) were transposed in the Bulgarian legislation. In this way, harmonization was carried out of the technical conditions of accessibility and efficient use of bands 900 MHz and 1800 MHz by systems providing MCV services in the European Union's territorial seas. The systems for provision of MCV services complement the mobile connection in the zone of the territorial seas of the EU member states where land terrestrial networks do not provide coverage.

The General requirements also determined the radio frequency spectrum and the conditions for its use by aircraft earth stations (AES), which ensured the implementation of the provisions of Decision ECC/DEC/(05)11 of the Electronic Communications Committee to the European Conference of Postal and Telecommunications Administrations on the free circulation and use of aircraft earth stations (AES) in frequency bands 14-14.5 GHz (Earth-space), 10.7-11.7 GHz (space-Earth) and 12.5-12.75 GHz (space-Earth).

With the amendment and supplement to the Rules for carrying out electronic communications for private needs via radio equipment using radio frequency spectrum which does not need to be individually assigned, and the List of radio equipment that uses frequency bands harmonized within the European Union and the terminal electronic communication devices, in the Bulgarian legislation were transposed the provisions of Decision 2010/368/EU of the European Commission amending Decision 2006/771/EC on harmonization of the radio spectrum for use by short-range devices and Recommendation ERC/REC 70-03 of the Electronic Communications Committee relating to the use of short-range devices.

The provisions of most Decisions of the European Commission regarding the harmonized use of radio frequency spectrum have been transposed to the Bulgarian legislation and are being effectively applied. The above excludes Decision 2005/928/EC of the European Commission for the harmonization of frequency band 169.4-169.8125 MHz in the Community, amended with Decision 2008/673/EC, and Decision 2008/477/EC of the European Commission for the harmonization of frequency band 2500-2690 MHz for terrestrial systems, which allow the provision of electronic communications services in the Community. Frequency bands 169.4-169.8125 MHz and 2500-2690 MHz are used for the needs of the national security and defence.

In order to release frequency the band 169.4000-169.8125 MHz for civil needs and to apply Decision 2005/928/EC in Bulgaria, CRC coordinated the use for the needs of the national security and defence of a total of 425 kHz from the radio frequency spectrum intended for civil needs in the National radio frequency spectrum allocation plan.

With Decision 2010/194/EC of the European Commission amending Decision 2009/1/EC on provision of derogation at the request of the Republic of Bulgaria in accordance with Decision 2008/477/EC, the transitional period for the application of Decision 2008/477/EC in Bulgaria was extended by one year (up to 31 December 2010 for North Bulgaria and 31 December 2011 for South Bulgaria). In 2011, the efforts should be focused on transposing Decision 2008/477/EC to the Bulgarian legislation and granting rights for the use of individually assigned radio frequency spectrum in frequency band 2500-2690 MHz. It should be noted that in 2009, following coordination between the state authorities and agencies concerned, CRC designated alternative frequency bands for the use by the national security services for the construction of a new radio communication system that will replace the currently existing one in radio frequency band 2500-2690 MHz.

The application of Decision 2010/267/EC of the European Commission on harmonized technical conditions for the use of frequency band 790-862 MHz for terrestrial systems, which allow the provision of electronic communications services in the European Union, will also become possible after the release for civil needs of frequency bands 766-814 MHz and 822-862 MHz, which are now used for the needs of the national security.

The lack of funds specially appropriated for modernization of the existing communication systems used for the needs of the national security and defence is the reason for the still incomplete update of the National radio frequency spectrum allocation plan. The separate state authorities and agencies using frequency resource failed to reach an agreement on the allocation of the spectrum for civil needs and for the needs of national security. Taking into account the quick development of the electronic communications sector, this appeared as an obstacle for the provision of a frequency resource for civil use and for the creation of conditions for the introduction of new technologies using the radio frequency spectrum more effectively. As a result, the development of competition in the electronic communications sector was restricted and the creation of better conditions for development of a single pan-European market was hampered.

Mobile radio service

In order to ensure the efficient use of radio frequency spectrum and to create conditions for development of a competitive communications market, considering the available spectrum of frequency bands 1800 MHz and 2 GHz, CRC organized public consultations about the prospects for use of the available resource in these frequency bands. In their statements submitted within the framework of consultations, the undertakings expressed an interest in principle towards the available resource in the specified ranges, and did not commit to participation in the tender procedure. No interest was registered in the utilization of the available frequency resource by new undertakings. An interest in principle in the available resource in frequency band 1800 MHz, with a view to expansion, modernization and development of the already constructed mobile networks, was declared only by active players on the mobile services market.

In 2010, at the request of the undertaking, the Commission provided additional individually assigned scarce resource – radio frequency spectrum 2x5 MHz in band 2 GHz, to "COSMO BULGARIA MOBILE" EAD, for the provision of public electronic communications via land mobile network – UMTS, with a view to the expansion, modernization and development of the already constructed mobile network of the undertaking, which facilitates the provision of wireless broadband access to the users.

Two temporary permits were issued to "ERICSSON TELECOMMUNICATIONS BULGARIA" EOOD for the use of individually assigned scarce resource – radio frequency spectrum (2x5 MHz in frequency bands 1920-1980 MHz/2110-2170 MHz and 2x10 MHz in frequency bands 2500-2570 MHz/2620-2690 MHz). Through the provided frequency resource, the undertaking presented its latest technologies and solutions in the area of mobile

communications, multimedia and data transfer.

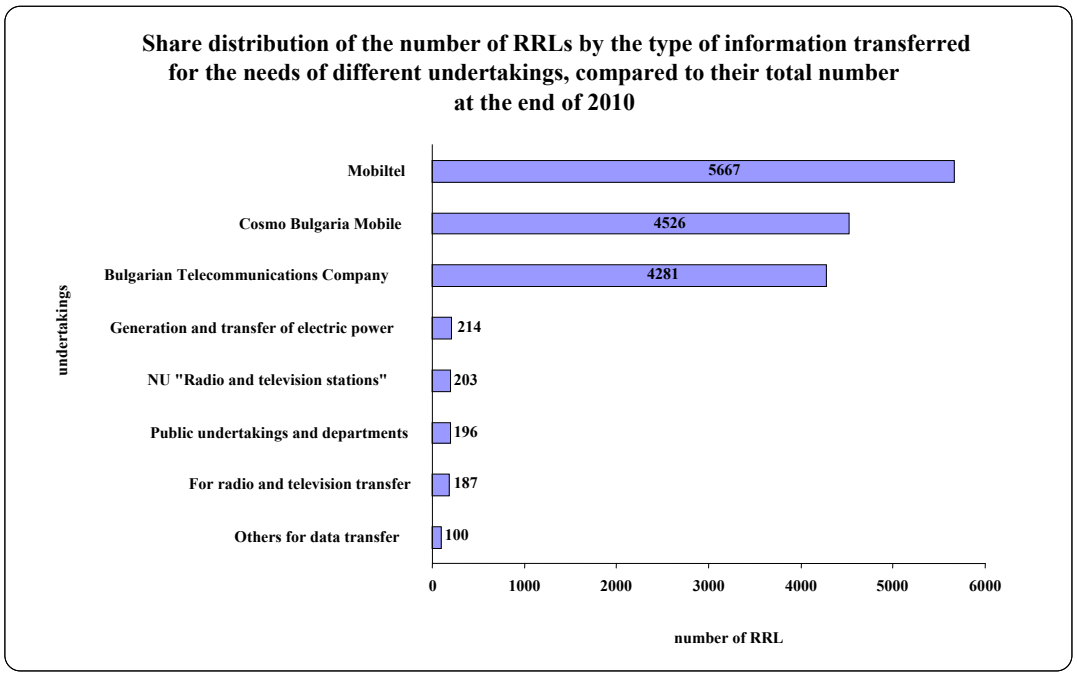
CRC issued temporary permits for the use of individually assigned scarce resource – radio frequency spectrum in band 420 MHz to "MOBILTEL" EAD, in order to test new technical equipment for construction of electronic communications network for the performance of experimental data transfer (telemetry) and to test the constructed experimental system for remote reading of some devices of public utilities.

Following an analysis of the radio frequency spectrum provided for use and a national coordination, harmonization of radio frequencies and frequency bands, with all state authorities, departments and agencies concerned, 161 radio frequencies were provided to undertakings for the performance of electronic communications for private needs through an electronic communications network from the terrestrial mobile radio service - PMR (Private Mobile Radio).

Fixed radio service

In 2010, the technical data of a total of 4006 radio relay links (RRLs) were amended and supplemented, including the provision of radio frequency spectrum to new 2054 links, thus, their total number exceeded 15270. When compared with 2009, the increase is of 4.3% (3832 in 2009). The increased number of radio relay links deepened the acute spectrum shortage for the fixed radio service. The trend for construction of networks with a total digital capacity of over 900 Mbit/s in one destination, continued.

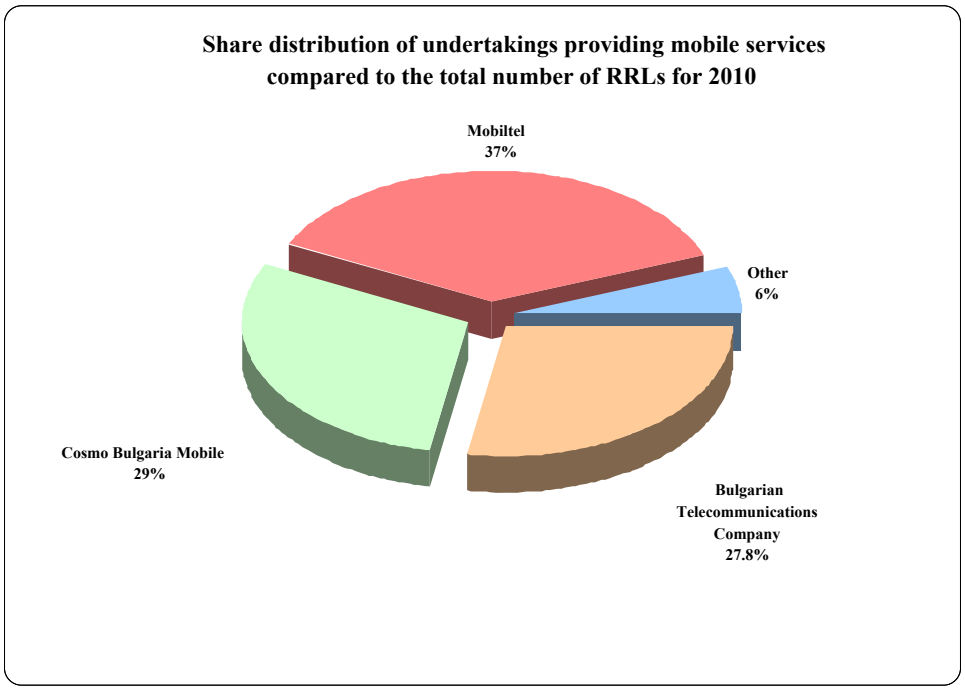
The share distribution of the number of RRLs, depending on the type of information transferred for the needs of different undertakings, compared to their total number at the end of 2010, is presented on Fig. 53. It is clear that the main part of the occupied radio frequency spectrum was used by undertakings providing mobile services, and "BULGARIAN TELECOMMUNICATIONS COMPANY" AD.



Source: *CRC*

Fig. 53

Fig. 54 displays information on the share distribution of these undertakings compared to the total number of RRLs for 2010.

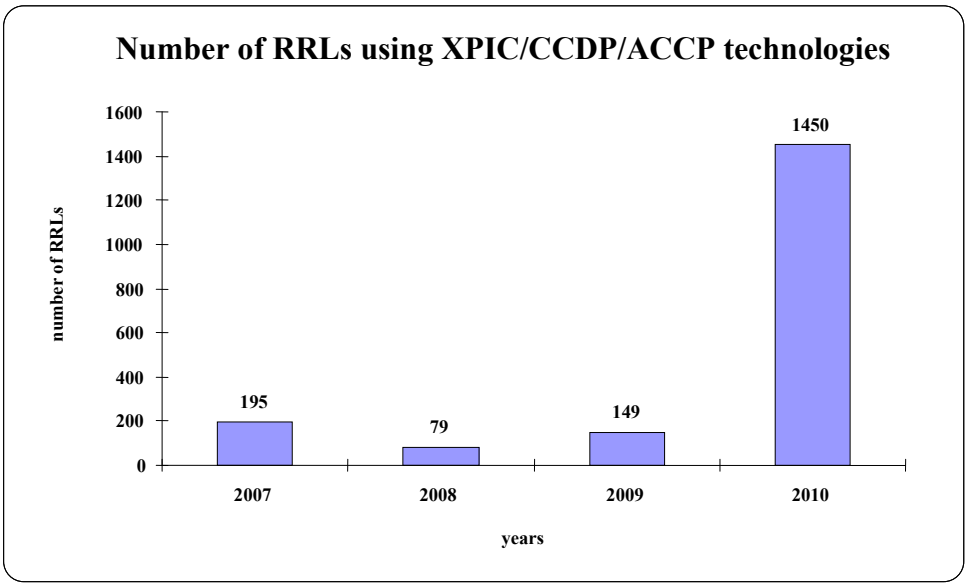


Source: *CRC*

Fig. 54

At the same time, the trend towards reduction of the number of operative authorizations continued, especially for frequency band 10.3-10.68 GHz, where most of the networks are for transmission of radio and television programs. This decline did not lead to a more intensified use of the frequency allocation of Recommendation CEPT/ERC/REC 12-05, Annex A of the European Conference of Postal and Telecommunications Administrations, which allowed the placing of networks with digital speeds from 4 Mbit/s to 4x34 Mbit/s in frequency band 10.3-10.68 GHz in the especially valuable segment of mid-length links between 6 km and 20 km.

The trend for the construction of high-tech digital systems using XPIC/CCDP/ACCP technologies continued, as the number of RRLs using these systems reached 1450 at the end of 2010. Fig. 55 displays the growth of these RRLs by years.



Source: *CRC*

Fig. 55

A growing part of the transmission was carried out through the use of a spectrum in the high-frequency bands. The number of RRLs in band 18 GHz totalled 4236, which means that the relative share of RRLs in this band remained at 28%. The development of high-density communication networks in the high-frequency bands continued. At the end of the year, radio relay links in bands 26 GHz, 28 GHz and 38 GHz, for which there are permits issued for the use of radio frequency spectrum, were 4859, which in percentage terms represents 31.81% (compared with 29.33% at the end of 2009) of the total RRL number.

During the year, a part of the rights granted by an authorization issued for the use of individually assigned scarce resource – radio frequency spectrum for the provision of electronic communications through an electronic communications network from the fixed radio service of the "point-to-point" type, were transferred from the "BULGARIAN TELECOMMUNICATIONS COMPANY" AD to "NURTS BULGARIA" EAD. Thus, "NURTS BULGARIA" EAD was issued an authorization for the use of a scarce resource – radio frequency spectrum for the provision of electronic communications through an electronic communications network from the fixed radio service of the "point-to-point" type, for the RRLs transferred from the "BULGARIAN TELECOMMUNICATIONS COMPANY" AD. Most of these RRLs are used for transmission of radio and television signals, including the programs of the Bulgarian National Television and the Bulgarian National Radio.

The trend for accelerated development of the service provision through networks for broadband wireless access (BWA) continued in frequency band 3.4-3.6 GHz. The final establishment of the technologies organized as a duplex connection of the TDD type accelerated the widespread implementation of base stations under the WiMAX technology with a transmission band of 5 MHz and 10 MHz in one direction. The total number of transceivers under the WiMAX technology increased by nearly 50%, which allowed the considerable improvement in the offering of broadband services for fixed, nomadic and mobile connectivity.

In the past year, CRC allowed the transfer of the authorization granting the right to use 2 frequency blocks of 10.5 MHz in the band 3.4-3.6 GHz, from "MOBILTEL" EAD to "MAX TELECOM" OOD, for a period of one year (until 8 July 2011). After this transfer, the number of undertakings authorized to use individually assigned scarce resource – radio frequency spectrum for provision of electronic communications via electronic communication network for broadband wireless access (BWA), reached four.

In 2008, 2009 and at the beginning of 2010, a number of undertakings gave up or greatly reduced the use of the frequency resource in radio frequency band 26 GHz (24.5-26.5 GHz) for the provision of electronic communications through an electronic communications network for fixed wireless access (FWA). CRC carried out an analysis of the so released spectrum, aimed at offering different options for its future allocation and conditions of provision.

Satellite radio services

During the year, the main activity related to regulation of satellite radio services was focused on the coordination of satellite systems aimed at the protection from potential interference of the two Bulgarian positions on geostationary orbit. The essence of the processes on the coordination of satellite systems is in averting potential interferences to the Bulgarian positions on geostationary orbit and on the territory of Bulgaria, which may be caused by the commissioning of other satellites in orbit. To this end, analysis was performed of all biweekly circulars of BR IFIC on space radio services, issued by the Radiocommunication Bureau to the International Telecommunication Union (ITU) in 2010.

In accordance with the ITU procedures, the allotment of the position on geostationary orbit 56.02^{o} E was transformed into assignment. In this relation, an amendment was made to the issued by "BALKANSAT" EOOD authorization for the provision of a position on the

geostationary orbit assigned for the Republic of Bulgaria for the provision of electronic communications through satellite system BULSAT-30B. In this way, the undertaking was given the opportunity to commence the required actions to launch and commission the satellite.

At the same time, serious difficulties emerged before the implementation of the planned satellite system of the second Bulgarian position on geostationary orbit 1.2^{o} W, intended as a national system of the broadcasting-satellite radio service. Regardless of the CRC's strict compliance with the procedural rules of ITU concerning coordination of satellite systems and the timely filing of appeals regarding potential interferences caused by the Norwegian satellite systems on position 1.2^{o} W, it turned out that the Norwegian satellite operator TELENOR has implemented its satellite systems THORV and THORVI in breach of the results obtained during the coordination, and the territory of Bulgaria was not excluded from the coverage zone of satellites. The precise measurements made by the specialized laboratory for satellite measurements of the Luxembourg operator SES ASTRA revealed that it is impossible to implement the Bulgarian system on position 1.2^{o} W with the planned parameters, determined in ITU's Radio Regulation. This required the search for an option for the system's implementation through a new position on the geostationary orbit, as a result of which the Bulgarian administration decided to file the respective application to the Radiocommunication Bureau to ITU.

Broadcasting

Analogue broadcasting

In 2010, CRC provided 3 frequency channels for the extension and improvement of the networks' coverage to an undertaking offering electronic communications through networks for terrestrial analogue broadcasting of television signals with national coverage, as well as 2 frequency assignments to an undertaking providing electronic communications through networks for terrestrial analogue broadcasting of radio signals with national coverage. In relation to the request of the Council for Electronic Media, an investigation was carried out and information was provided for the availability of 13 frequency assignments, including technical parameters, admissible powers, points of broadcasting, as well as other technical information for the cities of Sofia, Silistra and Botevgrad. In addition, CRC confirmed the information provided in 2009 to the Council for Electronic Media, regarding 2 frequency allocations for the cities of Pravets and Etropole.

A total of 73 technical characteristics of electronic communications networks for terrestrial analogue broadcasting of radio signals were examined and analysed, of which 31 were of undertakings authorized to use individually assigned scarce resource - radio frequency spectrum for the provision of electronic communications through electronic communication network for terrestrial analogue broadcasting of radio signals with national coverage, and 42 – of undertakings authorized to use individually assigned scarce resource - radio frequency spectrum for the provision of electronic communications through electronic communication network for terrestrial analogue broadcasting of radio signals with local coverage. Examined were also 107 technical characteristics of undertakings authorised to use individually assigned scarce resource - radio frequency spectrum for the provision of electronic communications through electronic communication network for terrestrial analogue broadcasting of television signals, where 11 of them were of undertakings providing electronic communications with national coverage, and 96 - of undertakings providing electronic communications with local coverage.

Digital broadcasting

In 2010, following a selection procedure, CRC issued to "HANNU PRO BULGARIA" EAD an authorization for the use of an individually assigned scarce resource - radio frequency spectrum for the provision of electronic communications through electronic communication

network for terrestrial digital broadcasting with national coverage, intended for broadcasting of programs of public operators, as per the First stage of the Plan for introduction of terrestrial digital television broadcasting (DVB-T) in the Republic of Bulgaria. The undertaking is obliged to build its network so that the period for simultaneous broadcasting through analogue and digital broadcasting network ("simulcast") for the same service area of programs compulsorily broadcasted by virtue of the Law on Radio and Television (LRT), would not be more than twelve months. The undertaking must ensure equality among programs intended for broadcasting through each network.

With regard to the already issued authorization for terrestrial digital broadcasting to "TAURKOM BULGARIA" EAD, 22 technical characteristics were examined and analysed in relation to the construction of two networks in a total of 6 allotment zones: Varna, Plovdiv, Ruse, Smolyan, Sofia and Stara Zagora.

Examined and analysed were 2 technical characteristics for amendment of the authorization issued by CRC for the use of an individually assigned scarce resource - radio frequency spectrum for the provision of electronic communications through electronic communication network for terrestrial digital broadcasting on the territory of Sofia city. The said authorization was transferred from the "BULGARIAN TELECOMMUNICATIONS COMPANY" AD to "NURTS BULGARIA" AD in 2010.

1.2. National and international coordination

National coordination and agreement with all state authorities, departments and agencies concerned is carried out with the goal to ensure the aeronautical and maritime navigation safety, the protection of national security, and the effective use of the radio frequency spectrum. In 2010, in the Advisory council for national coordination and agreement to CRC, 4421 radio frequencies and frequency bands were coordinated and agreed.

Upon requests received from foreign administrations, international coordination of radio frequency assignments of 24 foreign FM radio stations with the appropriate technical parameters, in accordance with the Regional Agreement concerning the use of frequency band 87.5-108 MHz for VHF sound broadcasting, Geneva, 1984 (Geneva-1984). The Bulgarian administration agreed upon 3 analogue frequency assignments, according to the Regional Agreement for the European broadcasting area concerning the use of by broadcasting service in the VHF and UHF bands (Stockholm, 1961), revised in relation to the terrestrial analogue television broadcasting with the Regional Agreement for planning of of digital terrestrial broadcasting service in the frequency bands 174-230 MHz and 470-862 MHz, Geneva, 2006 (Geneva-2006).

In accordance with Geneva-2006, 17 radio frequency assignments were coordinated along with the relevant technical parameters for terrestrial digital television broadcasting (DVB-T), upon requests submitted by foreign administrations.

All biweekly circulars for 2010 of the Radiocommunication Bureau to the Radiocommunication Sector of the International Telecommunication Union related to the international frequency information BR IFIC (BR International Frequency Information Circular) for terrestrial radio services were processed and analysed. In this respect, 516 radio frequency assignments to foreign administrations were coordinated under Geneva-1984. An objection was made for 1 radio frequency assignment under Geneva-1984.

The Bulgarian administration approved 22 radio frequency assignments and the relevant technical parameters of DVB-T transmitters of foreign administrations and 1 radio frequency assignment of analogue television station under Geneva-2006. Objections were made for 12 radio frequency assignments for DVB-T transmitters of foreign administrations.

Radio frequency assignments for satellite networks or terrestrial stations from all

biweekly circulars BR IFIC for space radio services were processed and analysed. As a result of the performed technical examinations and calculations, correspondence with the International Telecommunication Union and the relevant foreign administrations was carried out in order to protect the Bulgarian assignments for terrestrial, satellite and space radio services from interference. In 2010, the Bulgarian administration sent objections to the International Telecommunication Union and the foreign administrations, whose satellites might potentially affect us, as follows:

- upon coordination of non-planned satellite systems and existing Bulgarian terrestrial networks – 16 objections for 40 satellite systems;
- upon coordination of satellites from the fixed-satellite radio service emitting in space to Earth direction and a possible interference to the feeder link of a satellite from the broadcasting-satellite radio service– 4 objections for 5 satellite systems;
- coordination at close distance on the geostationary arc of a satellite on planned position from the fixed-satellite radio service and broadcasting-satellite radio service and non-planned satellite – 6 objections for 19 satellite systems;
- coordination for exceeding the carrier-to-noise (C/N) ratio for satellite systems from the fixed-satellite radio service– 6 objections for 12 satellite systems.

The protection of the orbital resources of the Republic of Bulgaria for radio services fixed-satellite and broadcasting-satellite from other satellite systems is an important factor for the smooth implementation and operation of the national systems. Moreover, coordination allows the smooth operation of satellite and terrestrial systems in bands on co-primary basis.

1.3. Electromagnetic compatibility

During the year, electromagnetic compatibility analyses of 114 Bulgarian and 516 foreign FM radio broadcasting stations with the aeronautical navigation systems ILS, VOR and COM were carried out.

In connection with the provision of the on-site electromagnetic compatibility and the radio services electromagnetic compatibility, 73 technical characteristics of radio transmission stations and 107 technical characteristics of television transmission stations were examined and analysed.

Due to the identified possible interference while carrying out analysis for electromagnetic compatibility with aeronautical radio services, 38 measurements were performed under the Methodology for measuring A1 type intermodulation products generated by the operation of closely situated FM radio transmission stations.

2. Numbers and addresses

The Communications Regulation Commission is in charge of the management of the scarce resource "numbers", which is related to the preparation, adoption and update of the National Numbering Plan, reservation, assignment for use and withdrawal of numbers, addresses and names, as well as control over the efficient use of the numbering resource. The Commission analyses the use of all types of numbers and addresses, prepares and implements measures to ensure the more efficient use of the numbering resource. The main goal in the management of the scarce resource "numbers" is to secure the required resource - both for the existing and for the new networks and services. During the year, an amendment to the National Numbering Plan of the Republic of Bulgaria has been made (promulgated SG, issue 102 of 30.12.2010), comprising terminological changes, change of the maximum length of some codes, as well as the release of ranges "130", "131" and "48" and their reservation for future use.

Ordinance No. 1 was issued, concerning the rules for distribution and the procedures for primary and secondary assignment for use, reservation and withdrawal of numbers, addresses and names. The Ordinance introduced changes to the form of numbers for access to value-added voice services (after code 90), as well as the way of informing users on the price of these services. In addition, option was granted, through the numbers from range "118", for the offer of additional enquiry services related to information provided by the subscriber of the respective phone number.

Five new undertakings were issued authorizations for the use of individually assigned scarce resource "numbers" and the provision of fixed telephony services, by which the total number of alternative undertakings providing such services at the end of 2010 reached twenty five. During the period, to the alternative operators providing fixed telephony service were assigned:

- 950 600 geographic numbers, in more than 500 regions;
- 500 numbers after an access code to the "Personal number" service (700);
- 500 numbers after an access code to free-of-charge services (800);
- 3 numbers for access to information services – 118XY;
- 20 addresses (18 national and 2 international signalling point codes).

Upon optimization of their networks and services, the alternative undertakings returned 58 300 geographic numbers and 1 access code to the "carrier selection" service. Nevertheless, there is a clear trend towards a territorial expansion of the alternative undertakings' networks and an increase in the number of their subscribers, which is confirmed by the newly issued authorizations and the numbering resource granted to them in 2010.

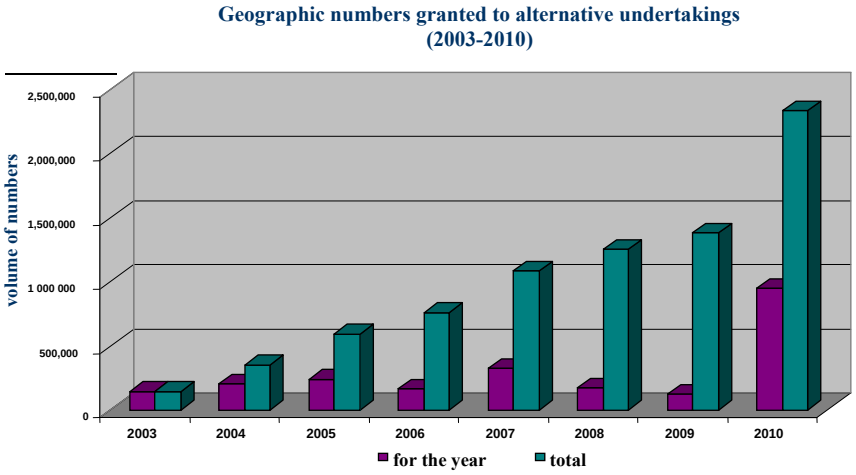


Fig. 56

The distribution of assigned geographic numbers by undertakings at the end of the year is displayed in the figures below.

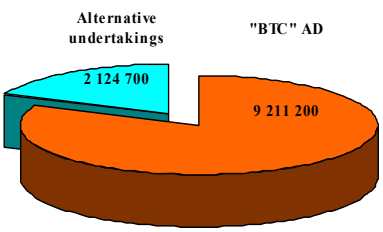


Fig. 57

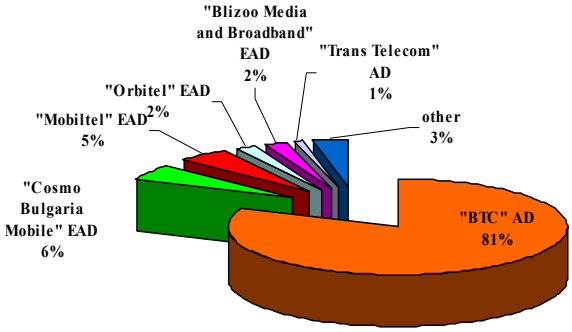


Fig. 58

As a result of the digitization process of the fixed telephone network of BTC and the improved efficiency of utilization of the scarce resource "numbers", in 2010:

- a resource of a total of 1,108,600 numbers in different geographic regions in the country was released;
- a total of 389,800 numbers changed from incomplete to full length of the national significant number.

5 short numbers for regional services were provided and 2 numbers of the same type were released.

During the year, changes were made to the List of geographic codes of numbering regions in the Republic of Bulgaria, expressed in a change or closure of some settlements' codes, a change in the names, as well as adding settlements.

Following public consultations, a decision was adopted for a change in the way of dialling geographic numbers in the Republic of Bulgaria by the introduction of closed dialling from the beginning of 2011. This change ensures a more efficient use of the scarce resource"numbers" by enabling the assignment of subscribers numbers starting with "0" and "1" after the geographic destination code. This increased the resource of geographic numbers in all regions of the country. The presence of sufficient resource enables undertakings providing fixed telephony services to develop their networks and to offer services in more settlements. Besides, this way of dialling geographic numbers creates opportunities for overcoming the technical restrictions in number portability implementation in terms of geographic numbers in regions serviced by analogue exchanges.

3. Number portability

In 2010, one of the main priorities of the CRC activity continued to be the provision of better conditions for implementing portability. In this regard, analysis was made of the efficiency of the portability procedure in case of administrative "two-stop-shop" service. CRC established that the donor provider uses different tricks for unjustified prolongation of the time for issue of a portability certificate or offers more favourable economic conditions to the user with the purpose to make him give up the transfer. As a result, CRC took actions to change the functional specifications for number portability in mobile networks, geographic and non-geographic numbers. Following a procedure of public consultation, the changes in the functional specifications were promulgated in SG, issue 26 of 06.04.2010. The main amendments are related to the implementation of the European Commission's recommendation for transition from the administrative procedure of "two-stop-shop" to "one-stop-shop" service. The new procedure guarantees a better protection of the interests of subscribers and users and the promotion and facilitation of the portability process. Other main changes to the functional

specifications are shortening of deadlines and introduction of provisions empowering CRC to impose price caps on the wholesale price, in case no proofs on the undertakings' expenses are available. The portability deadlines were shortened as follows:

- for mobile numbers - from 10 to 7 days;
- for geographic numbers: from 15 to 7 days for individual numbers and from 25 to 10 days for groups of numbers;
- in terms of non-geographic numbers, the deadline is 10 days.

The porting window, or the period of time during which the technical portability from the donor network to the network of the recipient provider takes place, and during which the subscriber may suffer loss of services, is respectively up to 7 hours for mobile and non-geographic numbers and up to 8 hours (one working day) for geographic numbers.

In order to improve the conditions for end users, more amendments and supplements were made to the functional specifications, giving the option to deactivate the sound signal when making a call to a ported number and eliminating the restrictions for the type of service in the mobile networks – prepaid or post paid, which may be used with the recipient provider.

A significant moment for the efficient porting of numbers was the agreement achieved between the undertakings for reduction of the wholesale price from BGN 22 to BGN 18, VAT excl., and for offering discounts for porting groups of numbers in both fixed and mobile networks. Discounts apply to the following groups of numbers:

- for porting groups of numbers from 300 to 500 numbers – 20% discount;
- for porting groups of numbers over 500 numbers – 30% discount.

The wholesale price for porting of non-geographic numbers is BGN 31.

The Portability procedures, agreed and signed by the undertakings and submitted to CRC, do not state a consumer fee, as a part of the General conditions stipulates that the recipient provider has the right to determine a consumer price. Currently, there is no data for the application of any retail prices to be paid by subscribers for porting. If any provider takes actions to set a retail price, there is a regulatory requirement that the amount of the respective price must not act as disincentive for the use of the number portability. The European practice shows that the recipient provider does not collect such fee, since it is in his interest to attract new subscribers.

The application in practice of the "one-stop-shop" administrative procedure for the three types of portability (of mobile, geographic and non-geographic numbers of ranges 700, 800 and 90) started on 6 August 2010.

An important moment for the development of the process of geographic numbers portability are the additional amendments to the functional specifications for their portability, which have lead to:

- provision of opportunity for portability of numbers of subscribers serviced by analogue or digital exchanges whose characteristics do not allow the implementation of portability;

- removal of the requirement stating that portability is implemented within the geographic codes in which there are numbers granted to one or more providers and that the recipient and donor provider must offer public telephone services in the same geographic code.

The regulatory setting of better conditions for the end user increased the interest to the opportunity to keep their number, as, according to their needs they make the best choice in terms of quality and price. This is also clear by the continually growing number of ported numbers in the mobile and fixed networks.

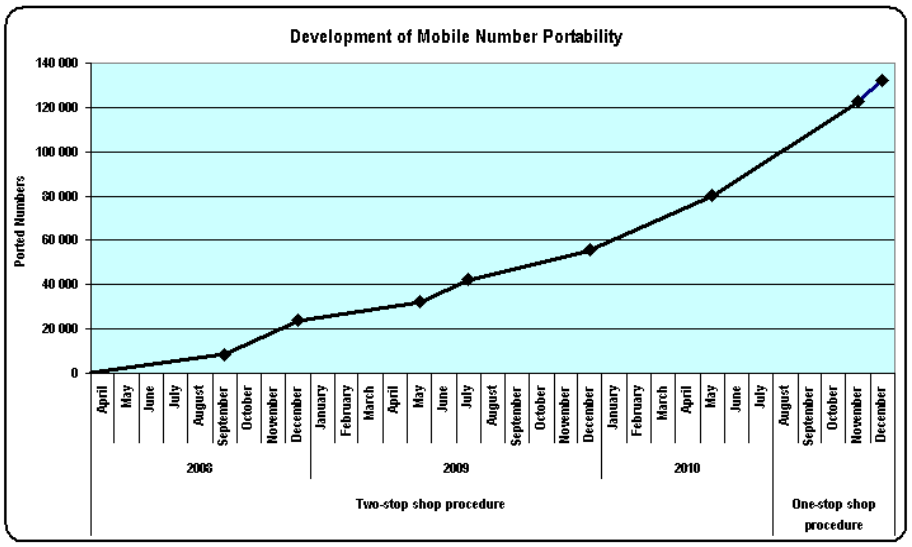


Fig.59

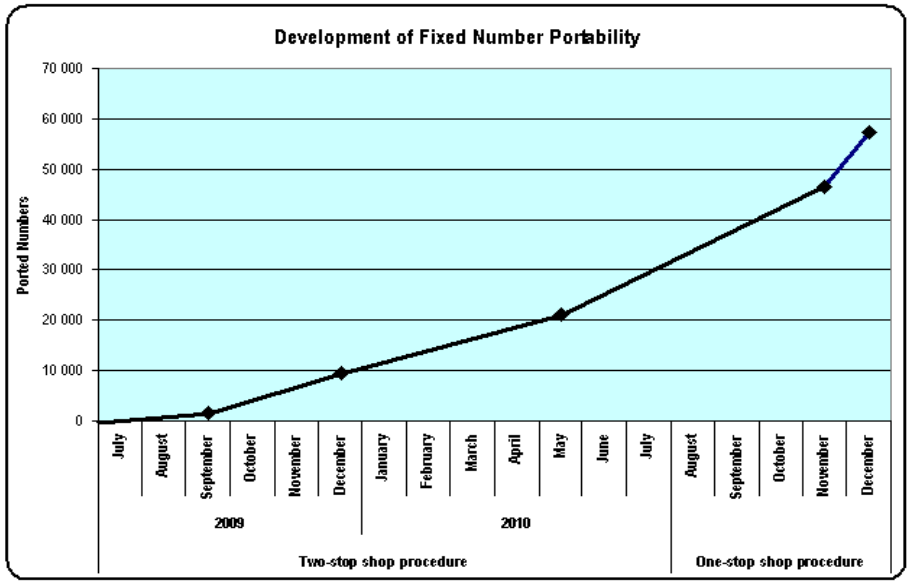


Fig.60

The maximum simplification of the administrative procedure had a considerable impact on the dynamics of the portability process, since after the introduction of "one-stop-shop" procedure, the number of ported numbers increased sharply, as compared to the entire period of portability with "two-stop-shop" procedure.