III. ACTIVITIES UNDER THE LAW ON ELECTRONIC COMMUNICATIONS AND THE LAW ON ELECTRONIC DOCUMENT AND ELECTRONIC SIGNATURE

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1. Activities in implementation of the CRC's priorities adopted for 2013

1.1. Effective management of scarce resources

1.1.1. Radio frequency spectrum

CRC manages the use of frequency spectrum for civil needs and the positions on the geostationary orbit allocated to the Republic of Bulgaria in compliance with the Radio Regulation of the International Telecommunication Union, decisions and recommendations of the European Commission and the Electronic Communications Committee to the European Conference of Postal and Telecommunications Administrations. CRC pursues the European policy in the sphere of frequency spectrum as, depending on the national specifics, it ensures conditions for implementation of the EC decisions on the harmonised use of frequency spectrum in the Community.

In 2013, with the amendment to the Technical requirements for operation of terrestrial networks capable of providing electronic communications services and the Technical requirements for operation of land mobile networks and related equipment, in the Bulgarian legislation were transposed the provisions of the European Commission Implementing Decision 2012/688/EU of 5 November 2012 on the harmonisation of the frequency bands 1920-1980 MHz and 2110-2170 MHz for terrestrial systems capable of providing electronic communications services in the Union. This ensured conditions for flexibility and neutrality in the use of frequency bands 1920-1980 MHz and 2110-2170 MHz. The conditions for use of frequency bands 1900-1920 MHz and 2010-2025 MHz were preserved, as the characteristics and parameters for UMTS land mobile networks intended for use in a time division duplex (TDD) mode remained unchanged.

CRC took part in the work on preparing a draft amendment and supplement to the National plan for radio frequency allocation. The amendment and supplement to the plan is aimed at introducing decisions adopted at the World Radiocommunication Conference (WRC-12), decision of the European Commission and the European Communications Committee, and are in compliance with the Radio Regulation of the International Telecommunications Union and the European Table of Frequency Allocations and Applications (ERC/Report 25).

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

By Decision No. 243/2012/EU of the European Parliament and of the Council establishing a multiannual radio spectrum policy program, a program for strategic planning and harmonisation of the spectrum use is created to ensure the functioning of the internal market in the Union policy areas involving the use of frequency spectrum, such as electronic communications, research, technological development and space, transport, energy and audio-visual policies.

According to Art. 6, Section 2 of Decision 243/2012/EU, in order to promote wider availability of wireless broadband services for the benefit of citizens and consumers in the Union, Member States shall make the bands 900 MHz, 1800 MHz, 2 GHz, 2.6 GHz and 3.6

GHz available under terms and conditions described in the relevant decisions of the European Commission[1].

Subject to market demand, Member States, including Bulgaria, shall carry out authorisation process in this band by 31 December 2012 without prejudice to the existing deployments of services and under conditions that allow consumers easy access to wireless broadband services. The provisions of the above decisions were transposed in the Bulgarian legislation, thus ensuring a technologically neutral use of bands 900 MHz, 1800 MHz, 2 GHz, 2.6 GHz and 3.6 GHz, but there is still available frequency resource in bands 1800 MHz, 2 GHz and 3.6 GHz. Band 2.6 GHz is not yet available for use for civil needs.

In implementation of the provision of Art. 6, Section 2 of Decision No. 243/2012/EU, in 2013, CRC announced its intention to conduct a tender for issuance of authorizations for the use (under condition) of individually assigned scarce resource - frequency spectrum in frequency band 2500-2690 MHz, and launched a procedure for public consultations on the announced intention. The statements received from the undertakings did not express any interest in the provision of spectrum under condition. Within the term specified, no intentions for use of the frequency spectrum of the above band were submitted to CRC, therefore no tender was announced for issuance of authorization for use of frequency spectrum in band 2500-2690 MHz.

To ensure an effective use of the radio frequency spectrum and to create conditions for development of a competitive communications sector, CRC also held public consultations on matters related to the prospects for use of the free resource in frequency bands 1800 MHz, 2 GHz and frequency band 3400-3600 MHz. During the consultations, questions of public significance for the electronic communications development were raised with a view to study the interest of the business in the available free spectrum, including the development prospects for LTE. Considering the received statements, based on the expressed views and interest of the undertakings, it may be concluded that the entire available frequency resource in these bands should be intended for expansion, updating and development of the networks of the active undertakings. No interest in obtaining frequency resource by new undertakings was reported.

With relation to transposing the provisions of Decision 2012/688/EU, CRC also amended the authorizations for the use of individually assigned scarce resource – frequency spectrum for the provision of public electronic communications via land mobile network – UMTS. The three undertakings with assigned spectrum in band 2 GHz have the right to use the 1920-1980 MHz and 2110-2170 MHz frequency bands for terrestrial networks capable of providing electronic communication services.

Mobile radio service

In 2013, "MAX TELECOM" OOD was issued a temporary authorization for the use of individually assigned scarce resource - frequency spectrum (2x2 MHz in frequency band 1800 MHz) with the purpose of testing new technical methods and/or technology for provision of electronic communications via LTE network.

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[1] Decision 2011/251/EU amending Decision 2009/766/EC (bands 900 MHz and 1800 MHz) on the harmonisation of the 900 MHz and 1800 MHz frequency bands for terrestrial systems capable of providing pan-European electronic communication services in the Community;

Decision 2012/688/EU (band 2 GHz) on the harmonisation of the 1920-1980 MHz and 2110-2170 MHz frequency bands for terrestrial systems capable of providing electronic communication services in the Union;

Decision 2008/411/EU (band 3.6 GHz) on the harmonisation of the 3400-3800 MHz frequency band for terrestrial systems capable of providing electronic communication services in the Community;

Decision 2008/477/EU (band 2.6 GHz) on the harmonisation of the 2500-2690 MHz frequency band for terrestrial systems capable of providing electronic communication services in the Community.

CRC issued temporary authorizations for the use of individually assigned scarce resource – frequency spectrum in frequency bands 876-880/921-925 MHz for the provision of electronic communications for own needs via land mobile network GSM-R, to the National Railway Infrastructure Company. The temporary authorizations were issued for:

- testing the newly built land mobile network GSM-R on the territory of railway route "Plovdiv - Katunitsa - Chishnegirovo - Vinitsa - Parvomay - Skobelevo - Krum - Dimitrovgrad";
- testing the new technical methods and/or technology for provision of electronic communications via land mobile network GSM-R on the territory of railway route "Pobit kamak Station - between Pobit kamak and Vakarel - Vakarel Station - Nemirovo Stop - up to Momin prohod (between Nemirovo and Kostenets) - Kostentets Station - Boyka Stop - Sestrimo Stop - Belovo Station";
- testing the new technical methods and/or technology for provision of electronic communications via land mobile network GSM-R on the territory of railway route "Plovdiv - Katunitsa - Chishnegirovo - Vinitsa - Parvomay - Skobelevo - Krum - Dimitrovgrad".

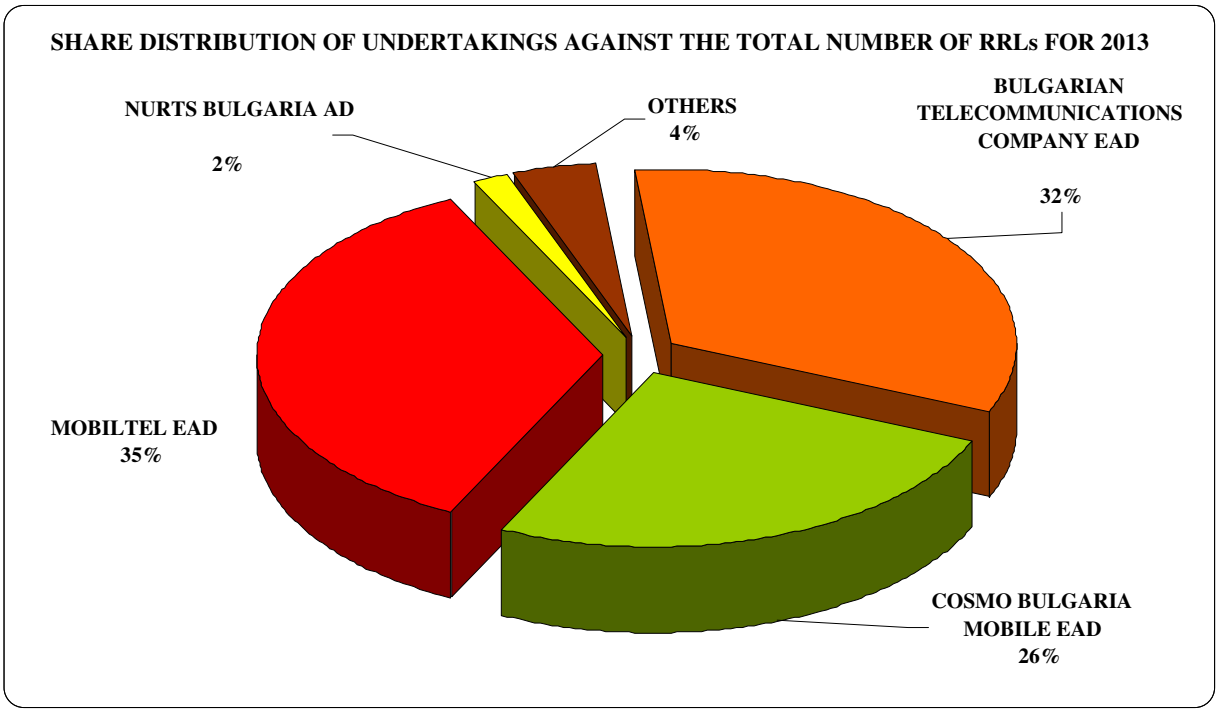
Following an analysis of the radio frequency spectrum provided for use and a national coordination and agreement of radio frequencies and frequency bands with all state authorities, departments and agencies concerned, 317 radio frequency channels (189 simplex and 128 duplex) were provided to undertakings for the construction of 324 new radio networks for the provision of electronic communications for private needs through an electronic communications network from the mobile radio service – PMR (Private Mobile Radio), and thus, the total number of deployed networks reached 2,228.

Fixed radio service

In 2013, 7 authorizations for the use of scarce resource - frequency spectrum were issued for electronic networks from a fixed radio service, as most of them are not intended for provision of services. 21 authorizations were terminated and 2 authorizations were withdrawn.

In 2013, 63 amendments and supplements were made to the technical data of a total of 2,602 radio relay links (RRLs), including the provision of radio frequency spectrum to new 934 links. A large number of RRLs was removed, thus their total number was reduced to 17,661, compared to 18,036 for 2012, i.e. the number of operating RRLs is down by 2.08% since the end of 2012. One of the reasons for the decreased number of radio relay links is the further improvement of technology used which determined the construction of networks with a total digital capacity of 150 to 900 Mbit/s and modulation levels of approximately 256/512 QAM or 1024 QAM in one direction. The trend for deployment of high-tech digital systems using XPIC/CCDP technologies continued, as the number of RRLs using these systems reached 4,788 at the end of 2013 (an increase of 9 % compared to 2012 – 4,358 items).

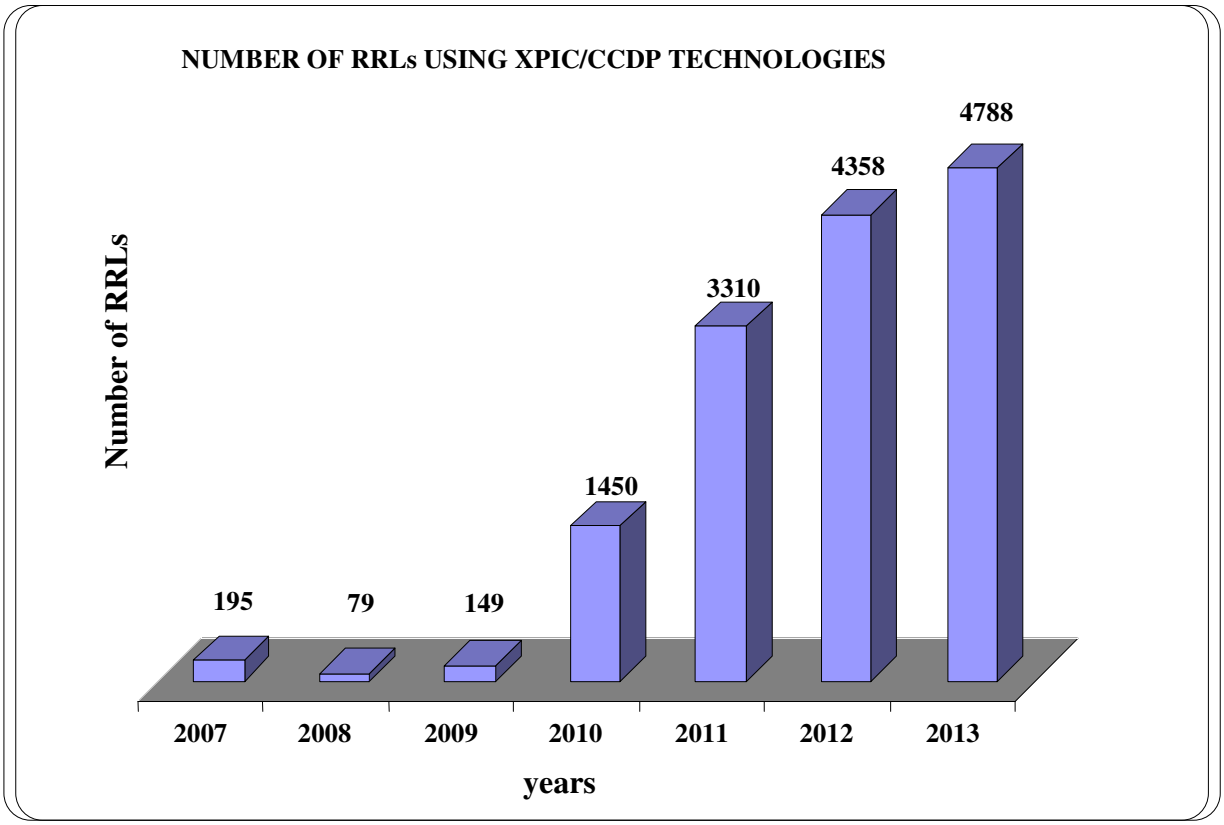
Figure 41 presents information on the share distribution of the main operators holding authorizations as of December 2013 for the use of individually assigned scarce resource – frequency spectrum for the provision of electronic communications via electronic communications network of the point-to-point type. The ratio is preserved, as compared to 2012, as the greatest change was reported by "NURTS BULGARIA" AD whose network was doubled as a result of the development of the existing network with relation to the deployment of the backbone network for distribution of terrestrial digital television (DVB-T).



Source: CRC

Figure 41

Figure 42 displays the breakdown of the growth of RRLs using XPIC/CCDP technologies by years.



Source: CRC

Figure 42

The trend towards a relative growth in the use of high-frequency bands, compared to the total number of RRLs, continued in 2013 as well. In band 18 GHz, where the increase is most significant, their number reached 5,104 (5,068 in 2012) which constitutes a share of 28.9% in the total number of RRLs at the end of 2013. The development of high-density communication networks using the super-high-frequency bands continued. At the end of the year, RRLs in bands 26 GHz, 28 GHz and 38 GHz, for which there are authorizations issued for the use of the frequency spectrum, totaled 7,508, as a sustainable migration of RRLs from bands 23 GHz and 26 GHz to bands 28 GHz and 38 GHz is observed here. The percentage ratio of the four bands remains 42.5% of the total number of RRLs.

In 2013, a downward trend is observed in service provision through networks for broadband wireless access (Broadband Wireless Access - BWA) in frequency band 3.4-3.6 GHz. The total number of the WiMAX technology transceivers fell by nearly 5%.

Satellite radio services

In 2013, the activity related to regulation of satellite radio services was focused on the coordination of positions, using geostationary orbit from fixed – satellite (FSS) and broadcasting – satellite (BSS) radio service. The approaching deadlines for launching the first Bulgarian satellite increase the intensity of the coordination process. The goal of this process is to avoid potential interferences to the Bulgarian planned systems on position 1.2˚ W (BSS) and 56.02˚ E (FSS), as well as of the additional modification made to the planned position for BSS at 1.9˚ E. To this end, analysis was performed of the biweekly circulars (BR IFIC) issued by the Radiocommunication Bureau of the International Telecommunication Union, using specialized program products provided to the administrations.

In the past year, a database was prepared of the existing equipment from the fixed satellite radio service suitable for work with specialized software for analysis and calculation of potential interferences between the equipment of the fixed satellite and fixed radio service.

Broadcasting

The terrestrial analogue television broadcasting was switched off on the 30th of September 2013. With this, the First stage of the Plan for introduction of terrestrial digital television broadcasting (DVB-T) in the Republic of Bulgaria (the Plan) ended successfully. In performance of the tasks set in the Plan, CRC carried out numerous activities related to the process of introduction of terrestrial digital broadcasting, such as: analysis, planning and designation of frequency resource for analogue transmission stations that are affected by the start of the broadcasting from digital networks during the period of simultaneous operation of the transmitters for terrestrial analogue and terrestrial digital television broadcasting (simulcast), and the validity term of 94 authorizations for terrestrial analogue broadcasting of television signals with local coverage was changed.

On 26.09.2013, CRC adopted decisions to terminate the authorizations for terrestrial analogue televisions as of 00:00 o'clock on 30.09.2013, in accordance with the decision of the Digital Television Authority[2].

Pursuant to the provision of § 209, Para 10 of the Transitional and Final Provisions of the Law on Amendment and Supplement to LEC, in 2013, CRC issued one authorization for provision of electronic communications via electronic communication network for terrestrial digital broadcasting of television signals for the territory of the Republic of Bulgaria.

[2] At its meeting held on 16.09.2013, the Digital Television Authority decided that the terrestrial analogue television broadcasting shall be terminated on 30.09.2013, at 00:00 o'clock. The final date for termination of the analogue broadcasting was published on the website of the Ministry of Transport, Information Technology and Communications.

Analogue broadcasting

In 2013, CRC provided 4 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 (CEM) for provision of free frequency resource concerning opened tender procedures, information was provided on 33 frequency assignments in the VHF-FM band, including technical parameters, admissible powers, points of broadcasting, as well as other technical information for the cities of Balchik, Belogradchik, Berkovitsa, Devnya, Etropole, Isperih, Kazanlak, Karnobat, Kozloduy, Kyustendil, Momchilgrad, Pomorie, Razgrad, Sevlievo and Shumen. CEM was also informed of the possibility for CRC to designate frequency assignments for 31 settlements. In relation to the request of CEM, an investigation was carried out and information was provided for the availability of 2 frequency assignments in the band of medium waves for the territory of the region covering the cities of Sliven, Burgas, Yambol and Stara Zagora, including the technical parameters, admissible powers, points of broadcasting, as well as other technical information. A total of 60 technical characteristics of electronic communication networks for terrestrial analogue broadcasting of radio signals were examined and analysed, of which 21 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 with national coverage, and 39 – 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 with local coverage.

According to the Plan: *"in the presence of harmful interference, whenever necessary and whenever possible, another scarce resource - frequency spectrum is provided for the radio transmitters for terrestrial analogue television broadcasting for the relevant service areas"*. In this regard, and with a view to the smooth transition of the period of simulcast, CRC carried out planning and designated a scarce resource necessary for terrestrial analogue broadcasting of television signals for transmission stations which are affected by the start of broadcasting from digital networks. Television channels were assigned for 2 transmission stations of local undertakings and for 3 transmission stations of a national undertaking.

Digital broadcasting

With regard to the already issued authorizations for terrestrial digital broadcasting to "NURTS DIGITAL" EAD and "FIRST DIGITAL" EAD, 715 technical characteristics were examined and analysed in a total of 12 allotments on the territory of the country: Blagoevgrad, Burgas, Varna, Vidin, Kardzhali, Pleven, Plovdiv, Ruse, Smolyan, Sofia, Stara Zagora and Shumen.

With relation to the process for introduction of terrestrial digital television, numerous reports and material were prepared on the performance of CRC's obligations in accordance with the scheduled meetings of the Managing committee - Digital Television Authority. Analyses were performed and materials were prepared with relation to the performance of other obligations of CRC related to the introduction of terrestrial digital television broadcasting.

National and international coordination

In 2013, in the Advisory Council for national coordination and agreement to CRC, 2281 radio frequencies and frequency bands were coordinated and agreed. National

coordination and agreement with all state authorities, departments and agencies concerned is carried out with the goal to ensure the aeronautical and maritime safety, the protection of national security, and the efficient use of the radio frequency spectrum.

Upon requests received from other administrations, international coordination of radio frequency assignments of 9 other VHF-FM radio stations with the appropriate technical parameters was carried out, in accordance with the Regional Agreement relating to the Use of the band 87.5-108 MHz for FM Sound Broadcasting, Geneva, 1984 (Geneva 1984). International coordination was performed in accordance with the Regional Agreement relating to the planning of the digital terrestrial broadcasting service in the frequency bands 174-230 MHz and 470-862 MHz, Geneva, 2006 (Geneva - 2006) of 6 frequency assignments and of 2 frequency zones, and one frequency zone of Romania was rejected.

All biweekly circulars for 2013 of the Radiocommunication Bureau to the Radiocommunication Sector of the International Telecommunications Union related to the international information on frequencies BR IFIC (BR International Frequency Information Circular) for terrestrial radio services were processed and analysed. In this respect, the following radio frequency assignments to foreign administrations were coordinated:

- 103 radio frequency assignments and the relevant technical parameters, in accordance with the Regional Agreement, Geneva - 1984;
- 1 radio frequency assignment and the relevant technical parameters of DVB-T transmitters, in accordance with the Regional Agreement relating to the planning of the digital terrestrial broadcasting service in the frequency bands 174-230 MHz and 470-862 MHz, Geneva, 2006 (Geneva - 2006).

The Radiocommunication Bureau was sent requests to add 39 radio frequency assignments to Bulgarian VHF-FM radio stations in Plan Geneva - 1984, to enter the radio frequencies of 184 radio frequency assignments from a fixed radio service in the Master International Frequency Register, and to suppress 773 radio frequency assignments. 10 radio frequency assignments, in accordance with the Regional Agreement relating to the planning of the digital terrestrial broadcasting in the frequency bands 174-230 MHz and 470-862 MHz, were recorded in Plan Geneva - 2006.

In accordance with the procedures under Art. 12 of the Radio Regulation of the International Telecommunication Union, 72 (32 in season A and 40 in season B) frequency assignments for terrestrial analogue and digital broadcasting of radio signals within the short-wave bands were coordinated.

Radio frequency assignments for satellite networks from the biweekly circulars BR IFIC for fixed-satellite and broadcasting-satellite radio services were processed and analysed. As a result of the performed examinations of the technical parameters and the further calculations, correspondence was exchanged with the International Telecommunications Union (ITU) and the relevant foreign administrations which had filed their requests with the biweekly circulars. In order to protect the Bulgarian positions on geostationary orbit and the assignments for fixed radio service from interferences, CRC sent objections, in accordance with the procedural rules of the Radio Regulation, to ITU and to the administrations whose satellite networks might potentially affect us, as follows:

- in coordination of non-planned satellite systems and existing Bulgarian terrestrial networks, pursuant to Art. 21 of the Radio Regulation – 19 objections for 32 satellite systems;
- in coordination of satellite networks 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, pursuant to Art. 7 of Appendix 30A to the Radio Regulation – 5 objections for 6 satellite systems;

- coordination at close distance on the geostationary arc of a satellite network on planned position from the broadcasting - satellite radio service and non-planned satellite network, pursuant to Art. 7 of Appendix 30 to the Radio Regulation – 17 objections for 38 satellite systems;
- coordination in exceeding the carrier-to-noise (C/N) ratio for satellite systems from the fixed-satellite radio service in frequency bands 4500-4800 MHz, 6725-7025 MHz, 10.70-10.95 GHz, 11.20-11.45 GHz and 12.75-13.25 GHz, pursuant to Appendix 30B to the Radio Regulation – 2 objections for 2 satellite systems.
- coordination at close distance on the geostationary arc of a satellite network on non-planned position from the broadcasting - satellite radio service and non-planned satellite network, pursuant to Art. 4 of Appendix 30 to the Radio Regulation – 17 objections were made for 6 satellite systems;
- coordination of satellite station from broadcasting-satellite radio service and fixed radio service when both are on primary basis, pursuant to Art. 9.11 of the Radio Regulation – objections were made for 2 satellite systems;
- coordination of satellite station using non-geostationary orbit and satellite system on geostationary orbit, pursuant to Art. 9.12A of the Radio Regulation – objections were made for 1 satellite system.
- coordination of emitting satellite station and receiving station from fixed radio service included in the table of frequency assignments, pursuant to Art. 9.14 to the Radio Regulation – objections were made for 32 satellite systems;
- coordination of satellite station potentially affecting a radio service included in the table of frequency assignments, pursuant to Art. 9.21 to the Radio Regulation – objections were made for 9 satellite systems.

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

Electromagnetic compatibility

During the year, electromagnetic compatibility analyses of 102 Bulgarian and 55 foreign VHF-FM radio broadcasting stations with the aeronautical systems ILS, VOR and COM were carried out.

In connection with securing of on-site electromagnetic compatibility and electromagnetic compatibility between the services, 89 assignments, including technical parameters, of radio transmission stations and 102 assignments, including technical parameters, 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, 4 radio frequency assignments were submitted for measurement under the Methodology for measuring A1 type intermodulation products generated by the operation of closely situated VHF-FM radio transmission stations.

1.1.2. Numbering and addressing

In performance of the Regulatory policy for the use of numbers, addresses and names for the provision of electronic communications, CRC adopted a new reference authorization for the use of individually assigned scarce resource - numbers for the provision of public electronic communications (Decision No. 102/31.01.2013). The new authorization takes into

account to a higher degree the principle of technological neutrality and created conditions for improvement of the efficient use of numbering resources. As a result, actions were taken to replace the several types of authorizations issued for use of numbering resource with one authorization which includes all numbering resources assigned to one undertaking. By the end of 2013, the authorizations for numbers of 28 undertakings were brought into compliance with the new reference authorization.

During the year, the work on the preparation for transition to geographic codes with length of up to three digits, as of 01.04.2014 (CRC Decision No. 2018/04.10.2012), continued. A procedure was launched for public discussion of an amendment to Ordinance No. 1 of 2010 regarding the rules for use, allocation and the procedures of primary and secondary assignment for use, reservation and withdrawal of numbers, addresses and names. CRC adopted and published at its website a new "List of geographic codes of numbering areas in the Republic of Bulgaria" which will come into force on 01.04.2014.

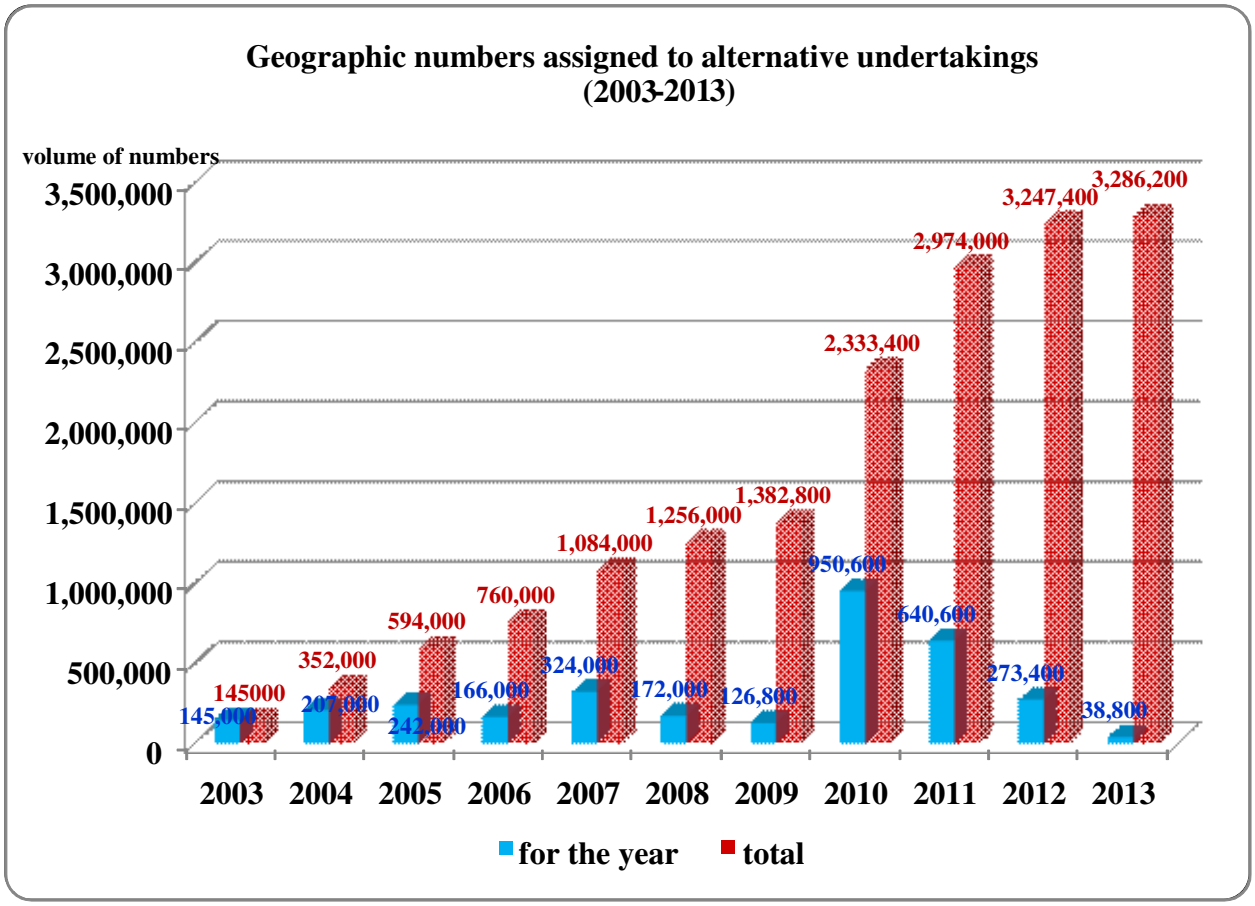
In the past year, five new undertakings were issued authorizations for the use of individually assigned scarce resource-numbers. Two undertakings suspended their activity. One authorization for numbers was withdrawn.

At the end of 2013, the total number of undertakings authorized to use the individually assigned scarce resource – numbers for provision of public electronic communications, is 39.

During the year, the alternative undertakings providing fixed telephony service were assigned:

- 38,800 geographic numbers;
- 100 numbers for the "Personal number" service (700);
- 300 numbers for freephone services (800);
- 1 access code for the "carrier selection" service;
- 21 addresses (17 national and 4 international signaling point codes);
- 100 000 numbers for services using Machine-to-Machine (M2M) communication

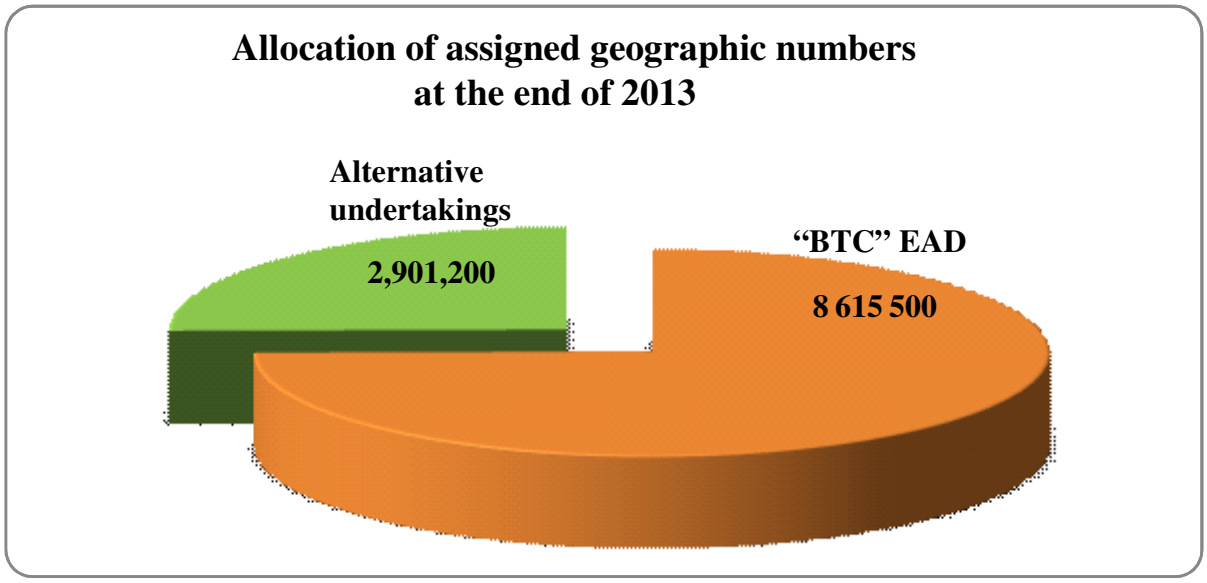
The course of the geographic number assignment process to alternative undertakings is displayed below on Figure 43.



Source: **CRC** **Figure 43**

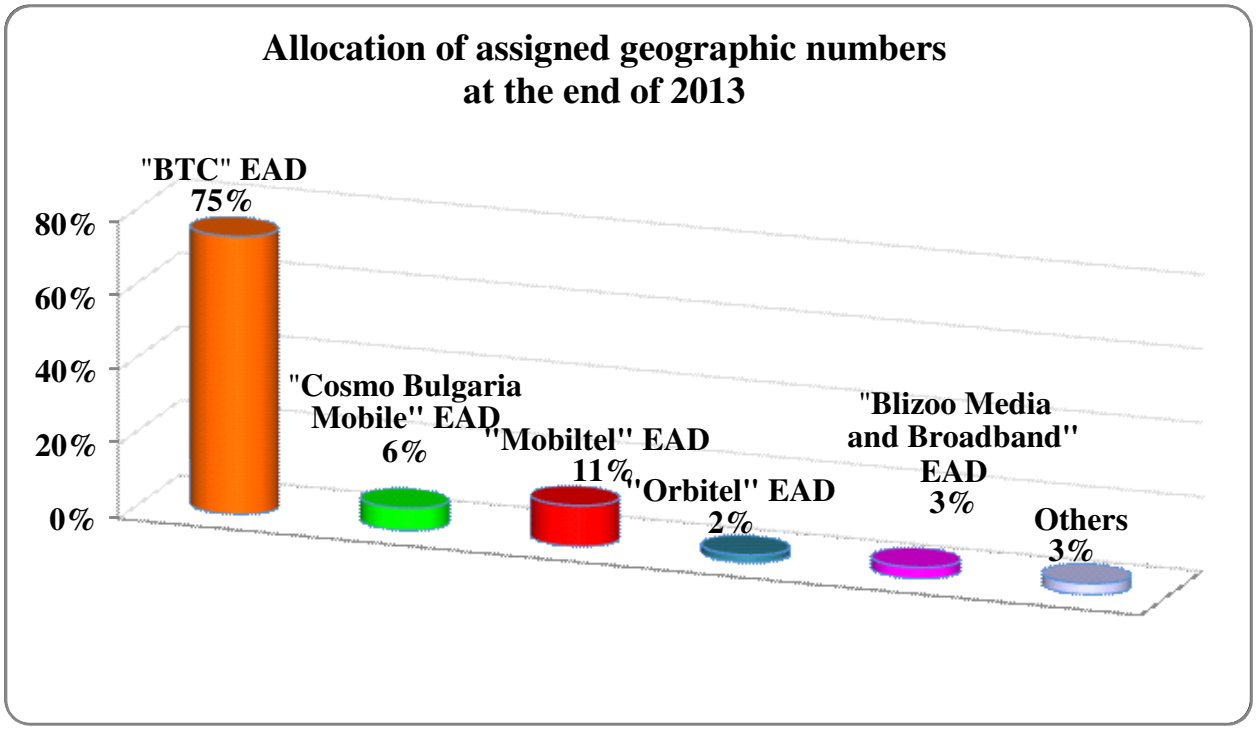
As the chart clearly shows, following a substantial increase in the number of assigned geographic numbers in the period 2010 - 2012, a significant drop was registered at the end of 2013. This is due to the accumulation of several reasons: the registered decrease in the number of fixed telephone lines of 6.1% at the end of 2012, compared to the year before, the forthcoming completion of the territorial expansion of the networks of alternative undertakings, and the increased trend towards transition of an increasing number of users to mobile voice telephone services instead of fixed ones.

Due to the optimization of networks and services of the undertakings or the termination of their activity, in 2013 were returned 34 400 geographic numbers, 1 international signaling point code, 1 national signaling point code, 100 numbers for the "personal number" service (700) and 100 numbers for freephone services (800), 12 000 numbers for value-added services (90), and 6 numbers for inquiry services (number format 118XY). In this respect, the actual distribution of assigned geographic numbers at the end of 2013 is displayed on the figures below.



Source: CRC

Figure 44



Source: CRC

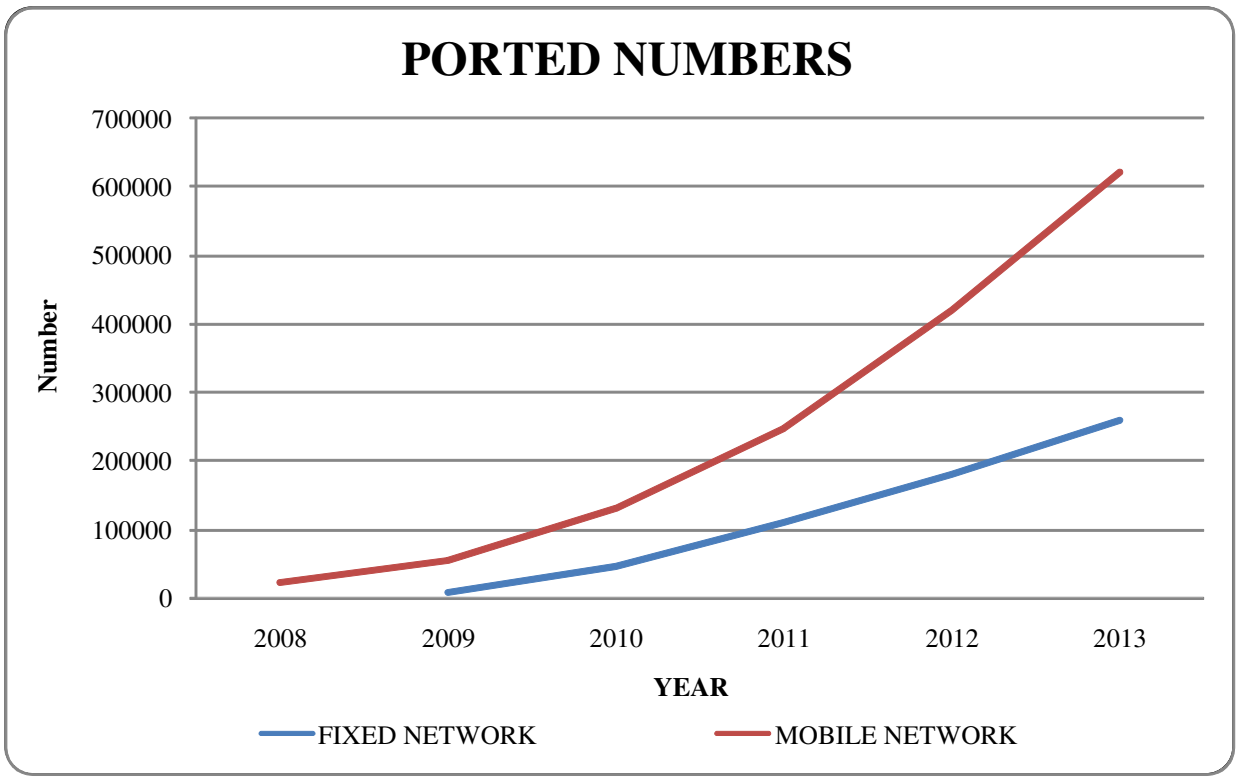
Figure 45

1.1.3. Number portability

In accordance with the provisions of the functional specifications for portability, in case of any change in the procedures for portability and their appendices, the providers prepare and submit to CRC a full and updated text in Bulgarian language, signed by the providers. In January 2013, CRC received the amended procedures for portability of mobile, geographic and non-geographic numbers, signed by the undertakings. After reviewing the

procedures, it was established that there are text that do not comply with the provisions of the functional specifications. By CRC decisions, mandatory instructions were given for their adjustment. Consequently, the procedures for portability were received, signed by the undertakings, in compliance with the CRC's instructions.

In 2013, the trend towards increase in the number of ported numbers on both fixed and mobile networks was preserved, as it is clear from the following figure:



Source: CRC

Figure 46

- At the end of 2013, the numbers ported in mobile networks totalled 621,206, as their number grew by 13.77% against 2012. The total number of users who took advantage of their right to portability formed 5.07% of the total number of end users.
- The numbers ported in fixed networks totalled 260,024 at the end of 2013, which represents 9.20% of the total number of end users. In 2013, the ported numbers grew by 8.67%, as compared to the year before.

As for non-geographic numbers, the ported numbers did not register a big growth. At the end of 2013, 67 numbers were ported.

1.2. Regulation and monitoring of the electronic communications services markets

The market regulation is aimed at providing opportunities to all stakeholders to benefit as much as possible from the effective competition on the relevant electronic communications markets. To promote the development of an effective competition, CRC:

- ***Performs monitoring of the electronic communications markets***

In accordance with Art. 40 of LEC, as well as Art. 15 of the Methodology for the

terms and procedures of relevant markets definition, analysis and assessment[3] (the Methodology), the monitoring of the Bulgarian electronic communications market is carried out by CRC through observation of a set of parameters for which data is collected from approximately 1100 undertakings by means of special-purpose questionnaires, drafted in compliance with the public electronic communication services provided by them. The set of parameters spans information necessary to the Commission for:

- definition, analysis and assessment of the relevant electronic communications markets according to the 2009 European regulatory framework;
- preparation of a summarized annual analysis on the state and development of the electronic communications market in Bulgaria for the preceding year, part of the regulator's Annual Report;
- providing information to the EC related to the preparation of the annual progress reports for the single European electronic communications market aimed at achieving the objectives set out in the Digital Agenda Scoreboard for Europe adopted in May 2010;
- providing information to international institutions and organizations of which CRC is a member by virtue of international agreements: ITU, BEREC, Independent Regulators Group (IRG), etc.;
- control of the fulfilment of imposed specific obligations.

➢ ***Defines, analyses, assesses the relevant electronic communications markets in accordance with the 2009 European Regulatory Framework and imposes specific obligations on undertakings having significant power on the relevant markets***

In 2013, the priority adopted by CRC was implemented with the completion of the second round for definition, analysis and assessment of the market for access to a public telephone network at a fixed location for residential and non-residential customers (corresponding to market 1 of EC Recommendation 2007/879/EC of 17 December 2007), market for publicly available national telephone services provided to residential and non-residential customers at a fixed location and the market for publicly available international telephone services provided to residential and non-residential customers at a fixed location (corresponding to markets 3-6 of EC Recommendation 2003/311/EC of 11 February 2003). The obligations imposed in the first round at the wholesale provision of services level were extended, while those at retail level were amended, and the most intrusive obligation - cost-orientation - was withdrawn. The regulatory measures taken are aimed at ensuring a competitive environment and conditions for entering of competitive undertakings to the relevant retail markets, while protecting the interests of end-users.

With final Decisions No.No.134 and 135 of 14.02.2013, CRC took an important regulatory step in terms of termination rates on individual mobile networks and call origination and termination from/at a fixed location on public telephone networks. In accordance with Recommendation 2009/396/EC, CRC determined termination rates based on the costs of an efficient operator and calculated using the Commission's BULRIC model. According to the specific obligations imposed on the wholesale markets for voice call termination on individual mobile networks and call termination on individual public telephone networks provided at a fixed location (second round), as of 01.07.2013, termination rates were reduced by over 50% for termination on mobile networks and by over 40% for origination and termination on fixed networks. It should be noted that the peak and off-peak rates were equalized, and in terms of origination and termination on the fixed network of BTC, equal rates for local and national segment are applied.

[3] http://www.crc.bg/files/_bg/Metodika_2012_DV.pdf (adopted by Ordinance No. 2076 of 23.10.2012 of CRC and promulgated in the State Gazette, issue 89 of 13 November 2012.)

➢ *Collects information and monitors the fulfilment of obligations arising from the Regulation on international roaming*

In 2013, the international roaming is regulated on the basis of the Regulation III[4] on roaming on public mobile communications networks within the Union. The Regulation stipulates:

- the obligation to maintain maximum charges (price caps) for wholesale and retail voice calls and short text messages (SMS) shall remain, with annual reductions until July 2014.
- the maximum wholesale charges from July 2014 shall remain valid until July 2022, and the maximum retail charges (Eurotariff) until July 2017;
- regulation of the data transfer charges (mobile Internet) with annual reductions until July 2014, as well as preservation of the price levels from July 2014 until July 2017;

The Regulation also contains provisions concerning the separate sale of roaming services which shall come into force on 1 July 2014. During the year, CRC carried out ongoing monitoring for applying the Regulation and established that the Bulgarian mobile undertakings offer to their subscribers the euro-voice, euro-SMS and euro-data tariffs. The Eurotariffs are not linked to any subscription or any other periodic or fixed fees, and may be combined with any retail tariff. As of September 2013, the weighted average prices of regulated services for international roaming of the Bulgarian undertakings providing mobile services within the EU[5] are below the price caps set in the Regulation, as follows:

- for wholesale voice calls – 0.188 BGN/min., VAT excl.;
- for retail outgoing voice calls – 0.552 BGN/min., VAT incl.;
- for retail incoming voice calls – 0.154 BGN/min., VAT incl.;
- for short text messages – 0.178 BGN per SMS message, VAT incl.;
- for data transfer - 0.911 BGN per MB, VAT incl.

The Bulgarian undertakings provide to their subscribers in roaming information about tariffs of regulated voice services, SMS messages and data transfer services, in accordance with the Regulation's requirements.

Detailed information for the users of roaming services is published at the official website of CRC[6].

➢ *Cooperates with the Commission for Protection of Competition*

On the grounds on the Rules for interaction and coordination adopted in 2008, which aim to establish conditions for effective cooperation and coordination between both institutions when exercising their legally delegated powers and implementing national and European electronic communications and competition law, the Commission for Protection of Competition (CPC) and CRC continued their active cooperation.

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[4] Regulation (EU) No 531/2012 of the European Parliament and of the Council of 13 June 2012 on roaming on public mobile communications networks within the Union

[5] Weighted average prices for the three Bulgarian undertakings providing roaming services within the EU, including prepaid and subscription services.

[6] http://www.crc.bg/files/_bg/Roaming_info-CRC-15-7-13.pdf

In 2013, CRC assisted CPC in carrying out investigations concerning potential breaches of the Law on Protection of Competition and evaluations of economic concentration cases involving undertakings providing electronic communications services.

1.3. Efficiency Enhancement of the National Radio Frequency Spectrum Monitoring System (NMS)

The NMS development continued according to the adopted regional principle with the aim to complete an integrated system for monitoring and coverage of the entire territory.

Regarding the technical and technological support of electronic communication networks control and monitoring activities, the focus in 2013 was laid on enhancement of the NMS efficiency, namely:

- technical support and further implementation of measurement equipment for radio frequency spectrum (RFS) monitoring and control;
- study of technological equipment and dedicated software applications for control and monitoring of new networks and technologies;
- technical support of dedicated technological equipment: fixed, mobile and transportable monitoring stations, portable measurement equipment and NMS communication networks (configuration, set up and administration).

In 2013, the Remote Measurement Station (RMS) "Pleven" is put into operation as well as integrated in the NSM (Figure 47).

RMS "Pleven

Figure 47

The newly operated station expanded the opportunities of CRC for effective control of the radio frequency spectrum in bands from 20 to 3000 MHz in the central part of North Bulgaria.

With reference to the commitments under the Plan for introduction of digital terrestrial radio and television broadcasting in the Republic of Bulgaria, a procedure under the Law on Public Procurements was conducted in 2013, finalised in delivery of new transportable measurement systems for monitoring and control of terrestrial digital television broadcasting systems using DVB-T system. CRC has the necessary measurement equipment to carry out measurements for estimation of the digital DVB-T networks coverage as of the quality of the digital television signal broadcasted by them in compliance with the

requirements of the International Telecommunications Union (ITU) and the European Telecommunications Standards Institute (ETSI), etc.

At the end of 2013, for the implementation of its control functions, CRC has been operating the following measurement systems:

- 15 fixed stations for RFS monitoring (3 manned and 12 unmanned RMS) in the bands from 20 to 3000 MHz;
- 8 mobile stations for RFS monitoring;
- a dedicated mobile station for GSM 900/1800 and DVB-T;
- transportable system for measurement of the GSM/UMTS networks coverage and quality;
- 7 transportable measurement systems for DVB-T networks;
- 7 transportable measurement systems in the bands from 1.0 to 26.5 GHz;
- portable equipment in the bands from 9 kHz to 3 GHz.

1.4. International activity

In compliance with the established priorities for 2013, CRC deepened its active dialogue with EC and its cooperation with the National Regulatory Authorities (NRAs) of the EU member states for a harmonised and effective implementation of the EU regulatory framework and introduction of the best regulatory practices.

The Commission intensified its attendance and its active position in the decision-making process by governmental and specialized international and European organizations in the field of communications.

The further deepening and development of the relations of constructive cooperation and interaction with the regulators from the neighbouring countries was aimed at confirming the leading role of CRC in the region.

Participation in the work of European structures

In 2013, the Commission continued to participate at the highest level in the General Assemblies of the Independent Regulators Group (IRG), in the Plenary Meetings of the Body of European Regulators for Electronic Communications (BEREC), and the European Regulators Group for Postal Services (ERGP).

At expert level, CRC participated in the work of the relevant Contact networks and in the expert working groups/project teams to the Independent Regulators Group (IRG), namely:

- Framework Implementation
- Convergence and Economic Analysis
- Net Neutrality
- International Roaming
- Next-Generation Networks
- End Users
- Benchmarking
- Termination Rates
- Regulatory Accounting

CRC representatives also took part in the activity of the working group on the harmonized consultative process for handling cases of fraud or misuse with relation to Art. 28(2) of the Universal Service Directive.

In 2013, CRC also took part in the activity of the working group "Network and Information Security" (WG NIS) to IRG which works in close cooperation with the European Network and Information Security Agency (ENISA).

In 2013, the Commission took part in the activity of BEREC on assessment of market analyses of other NRAs for which the EC has started second phase pursuant to Art. 7 of the Framework Directive – in particular, on the cases of Spain and Italy.

CRC representatives also participated in the joint workshop of BEREC and the Euro-Mediterranean Regulators Group (EMERG) on *"Enforcement and Judicial Review of NRAs Decisions"* held in December 2013, in Brussels, Belgium.

CRC experts participated actively in the working groups to ERGP, *"Regulatory accounting" and "End Users Satisfaction and Monitoring of Market Outcomes".*

During the 2013-2014 academic year, a CRC representative was approved and completed successfully the first two blocks of the training organized by the Florence School of Regulation in Florence, Italy.

Communication with the European Commission

CRC maintained an active dialogue with the EC, whereby up-to-date information was timely provided about CRC's regulatory activities in priority fields such as market analyses, number portability, effective management of the spectrum, transition to terrestrial digital video broadcasting, etc.

The regulator observed closely and took part as a full member in the activity of the EC working committees: Communications Committee (COCOM), Radio Spectrum Committee (RSC), Radio Spectrum Policy Group (RSPG), Postal Directive Committee, etc.

CRC also took part in the working meetings organized jointly by ENISA and EC with relation to Art. 243 of LEC introducing Art. 13 a of the Framework Directive that were held in May and October 2013 in Brussels, Belgium.

In September 2013, CRC participated in an ENISA Workshop on the certification services providers which was held in Brussels.

Participation in the activity of specialized international organizations

In 2013, CRC intensified its attendance and active position in large-scale forums organised by the International Telecommunications Union (ITU), Universal Postal Union (UPU), European Conference of Postal and Telecommunications Administrations (CEPT), European Telecommunications Standards Institute (ETSI), etc.

International Telecommunication Union (ITU)

CRC took part at the highest level in the annual global events of ITU - Annual session of the Council, Global Symposium for Regulators (GSR-13) in the city of Warsaw – Poland to which CRC contributed within the framework of the preliminary consultations, as well as in the ITU Telecom World 2013, and the Connect Asia-Pacific Summit in Bangkok – Kingdom of Thailand. During these events, the Chairman of CRC held bilateral meetings with heads of regulatory authorities with a view to establish a formal framework for bilateral cooperation by signing memorandums of understanding.

CRC representatives, at high and expert level, took part in the regional preparatory meeting for the World Telecommunications Development Conference of ITU (WTDC-2014) and the Regional Development Forum for Europe that were held in November 2013 in the city of Belgrade, Serbia. During the event, the priorities for development of the telecommunications, information and communication technology (ICT) were set at a regional level.

Commission's representatives took part in a seminar on regulatory and economic aspects of roaming organized by ITU in September 2013 in Geneva, Switzerland.

CRC participated in a regional seminar of the ITU Development Bureau for the countries from Europe and CIS which was held in Kiev, Ukraine, in July 2013.

At a Regional Regulatory Seminar on Transition to Digital Broadcasting and Digital Dividend held in November 2012 in the city of Budapest, Hungary, CRC took part with a presentation in a round table on *"Towards Successful Transition to the Digital Terrestrial Television Broadcasting: Country and Regional Challenges",* with the participation of representatives of Albania, Bosnia and Herzegovina, Germany, Greece, Hungary, Serbia and Turkey.

Network of regulators of the member states of the Francophone International Organization (FRATEL)

In 2013, CRC representatives took part in the 11th Annual Meeting of FRATEL, held in Bucharest, Romania, in October 2013. Within the framework of a round table on *"Quality of service: the role of the regulator for achieving the goals",* the presentation of CRC on *"Quality of services – unlimited transparency" was delivered.*

European Conference of Postal and Telecommunications Administrations (CEPT)

CRC experts participated in the activity of the working structures to CEPT:

- In the regular meetings of the Committee for ITU Policy (Com-ITU) held in January 2013 in Copenhagen - Denmark, in April 2013 in Prague - Czech Republic, and in November in Belgrade - Serbia.
- In a meeting of the Conferences Preparatory Group (CPG) to the Electronic Communications Committee (ECC) in Luxembourg, January 2013.
- In the regular meetings of the European Committee for Postal Regulation (CERP)

European Telecommunications Standards Institute (ETSI)

CRC took part in an ETSI seminar on the issues of network and information security held in January 2013 in the city of Sophia Antipolis, France, as well as in the 61st General Assembly of ETSI which was held in March 2013 in Mandelieu, France.

CRC participation in other significant international events

In 2013, CRC also took part in other important international events in the sphere of communications:

- Ministerial Program at the Mobile World Congress, in February 2013 in Barcelona, Spain;
- Eurasia Com Conference, in March 2013 in Istanbul, Turkey, where CRC delivered a presentation on the "Role of Regulation and Government Policy to Promote Broadband Development";
- International meeting-seminar of Rohde & Schwarz in April 2013 in Munich, Germany;
- 2nd Telecommunication and Media Forum of the International Communications Institute, in June 2013 in Istanbul, Turkey, during which CRC delivered a presentation on "Future of Fixed to Mobile Substitution and Convergence";
- "Financing the Future" Conference organized by the Portuguese regulator ANACOM in July 2013 in Lisbon, Portugal;
- BEREC – REGULATEL Summit in July 2013, Warsaw, Poland;
- Spectrum Management Conference and Cognitive Radio Workshop, September 2013 in Lisbon, Portugal;
- A distance learning course "Next generation broadband services and networks",

organized by the International Telecommunications Union, in the period 28 May – 24 June 2013.

Bilateral and regional cooperation

In addition to its membership in world and European organizations, CRC also develops an increasingly close cooperation at regional level - both on the basis of bilateral agreements with our neighbouring countries, and in the form of participation in more large-scale initiatives at regional basis, for instance:

- 10th Annual SEE Telecoms Forum, January 2013, in Belgrade, Serbia, where CRC delivered a presentation on "What Can Be Done to Promote a Sustainable Competition between the Incumbent and Alternative Operators";
- Seminars on issues related to the spectrum regulation organized by the Turkish regulator ICTA, held in May and October 2013 in Istanbul;
- Seminar focused on the users of spectrum monitoring systems ARGUS, organized by "Rohde & Schwarz"- Germany, in June 2013, in the town of Budva, Montenegro, with the participation of the regulatory authorities for control of the frequency spectrum of the countries from Central and Eastern Europe, among which were Albania, Poland, Czech Republic, Croatia, Belarus, Ukraine, Serbia, Greece, Latvia, Bosnia and Herzegovina, Slovenia, Kazakhstan, Montenegro;
- Regional Conference "E-Commerce and Postal Services", June 2013, Arandjelovac, Serbia;
- ITU-D Regional Seminar for CIS and Europe, July 2013, Kiev, Ukraine;
- MVNOs Industry Summit Central and Eastern Europe, September 2013, Warsaw, Poland;
- 11th International Conference “Regulatory Activity in Electronic Communications Sector“, organized by the Agency for Electronic Communications and Postal Services of Montenegro, in Budva, September 2013.
- Meeting of the heads of the regulatory bodies of the Balkan countries in October 2013, Skopje, Macedonia, etc.

Within the framework of the Memorandum of Understanding signed between CRC and the Turkish regulator ICTA, the exchange of information on the results from conducted measurements continued in 2013 as well with a view to solving the cross-border radio interference problems of our stations along the South Black Sea coast caused by Turkish transmitting stations.

The Commission consistently develops its relations with the countries from the region, as it aims at deepening the regional cooperation, according to the common European policy.

In 2013, the international activity of the Commission was focused on deepening the effective interaction with the European regulators, further developing the cooperation at a global, European and regional level, and affirming the CRC's active role in the international organizations working in the field of electronic communications and postal services.

1.5. CRC’s administrative capacity

1.5.1. Human resources

Among the priorities of CRC is to enhance its administrative capacity in order to ensure professionally prepared employees to carry out the functions of the regulatory

authority. To achieve the set tasks and to carry out the activity of CRC, it needs to attract, retain and develop employees with key competences and engagement.

The structure of the CRC's administration and the number of employees in 2013 are presented on Figure 48.

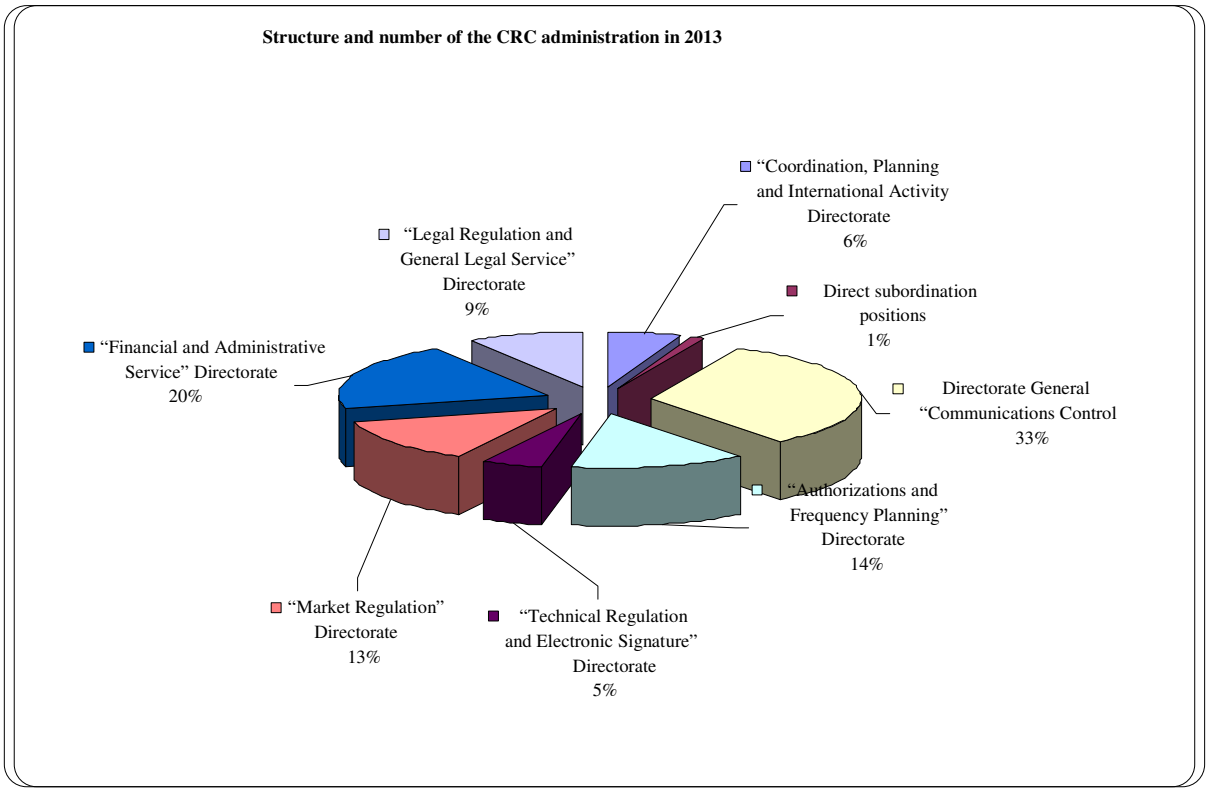


Figure 48

As of 31.12.2013, the average age of the staff was 41 years, the total number of CRC employees was 216, of which 202 were university graduates.

The allocation of employees with higher education is in the following areas: technical sciences, legal sciences, economic sciences, informatics and mathematics, humanitarian sciences, etc. (Figure 49)

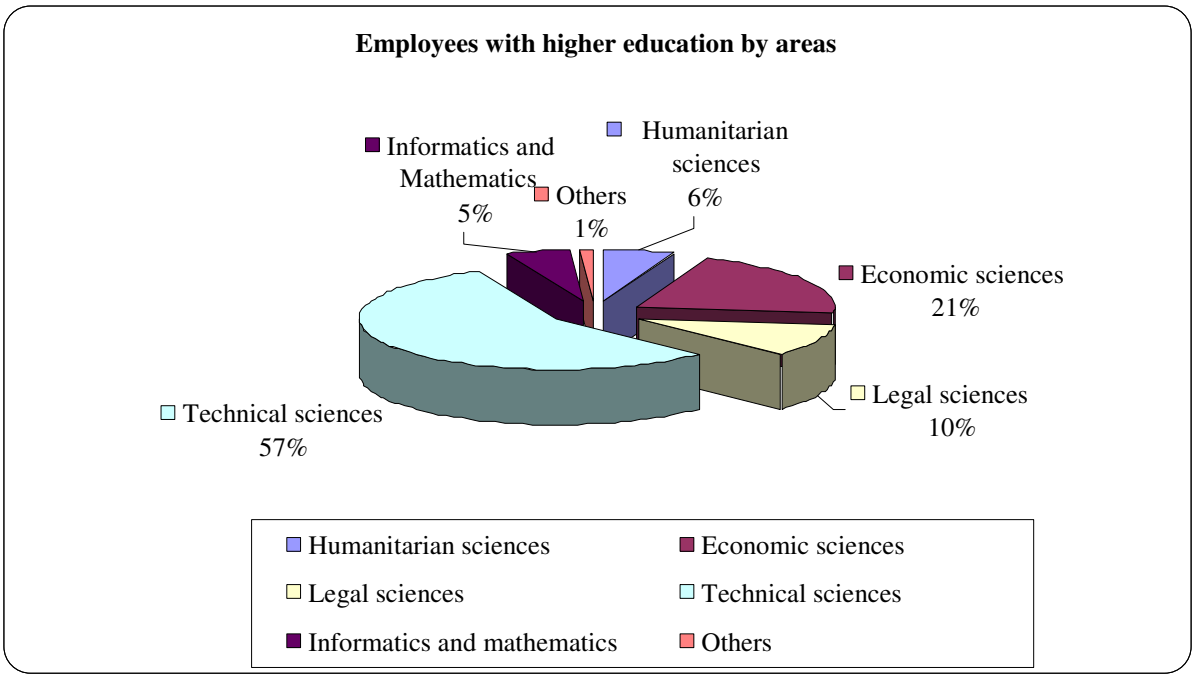


Figure 49

In the process of recruiting civil servants for the Commission's administration, the Law on Civil Servants, the Ordinance on Recruitment Procedures for Civil Servants, and the Internal Rules are applied. In 2013, 12 recruitment procedures were carried out and 17 new employees joined the CRC's administration team.

In 2013, 13 students conducted internship in the CRC administration under the internship organized by the Council of Ministers administration as a furtherance of the project "Building capacity for the future - conducting student internships in the state administration" implemented under Operational Program "Administrative Capacity".

CRC' employees took part in specialized trainings of external organizations and trainings carried out by the Institute of Public Administration under the project awarded to CRC "Enhancing the Administrative Capacity of the Communications Regulation Commission" under Priority Axis II "Human Resources Management", Sub-Priority 2.2. "Competent and Efficient Public Administration" of Operational Program “Administrative Capacity”, financed via European Social Fund.

The fields of training in different courses and seminars are displayed on Figure 50

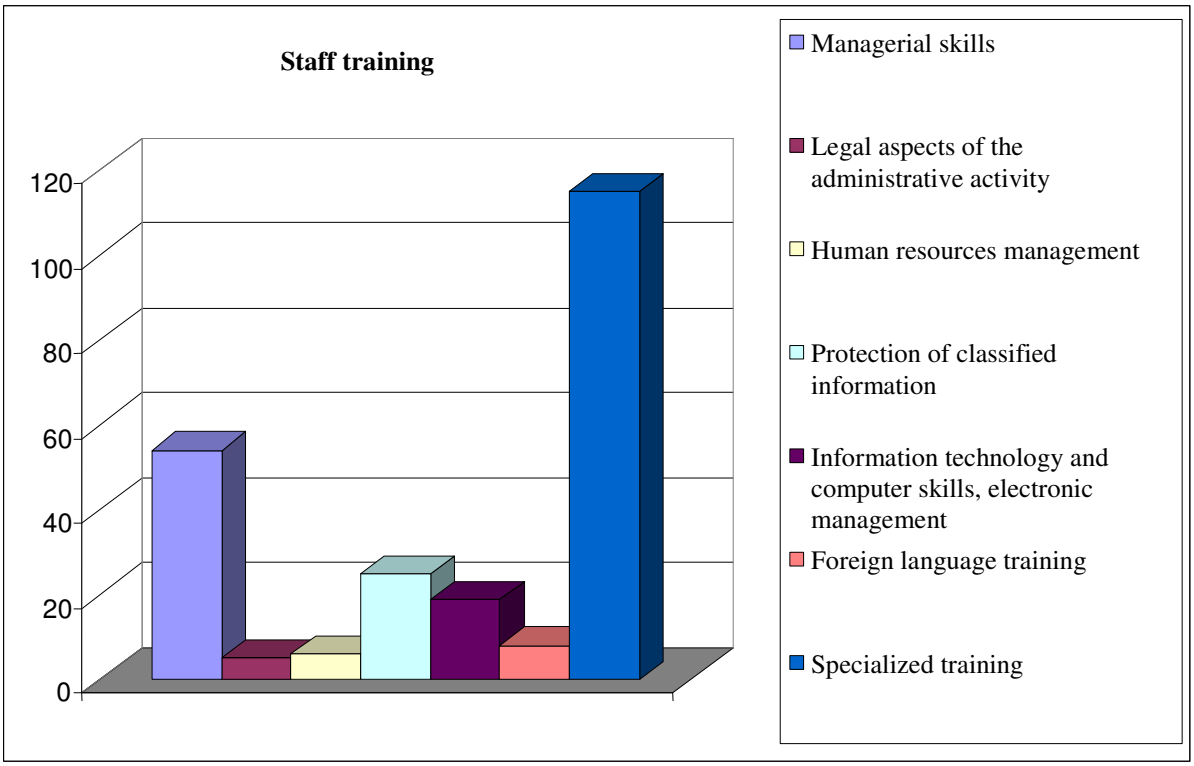


Figure 50

1.5.2. Information services

In 2013, CRC continued its work on building its internal and external information systems with a view to increase the quality of work of its administrative employees, to facilitate the access of the citizens and the business to information and provision of electronic administrative services. The activities related to the Commission's participation in e-government projects in the Republic of Bulgaria are as follows:

- Maintenance and operation of the information system “Licensing and Registers” providing 39 electronic administrative services to citizens and business. The information system was built with funds under Operational Programme "Administrative Capacity" and is certified under the Ordinance on the general requirements for operational compatibility and information security.
- Support and exploitation of a Documentary Portal to the document turnover system "Eventis" which also enables the exploitation of the information system “Licensing and Registers” which assists the management of information processes for maintenance of the electronic registers of the Commission and the provision of public access through the Internet, in compliance with the requirements laid down in LEC, LEDES and PSA.

2. OTHER IMPORTANT ACTIVITIES

2.1. Standardization

In compliance with Art. 30, item 22 of LEC, CRC performs the functions of the National Standardization Organization (NSO) for the European Telecommunications Standards Institute (ETSI). In 2013, CRC continued to actively participate in the work of four

Technical Committees (TCs) for standardization (TC47, TC57, TC75, TC80) to the Bulgarian Institute for Standardization (BDS), which dealt with electronic communications.

CRC sent to ETSI the rules and procedures applied in our country concerning: public enquiry on ETSI EN draft standards; conducting the procedure "standstill"; development of the national position in voting; introduction of the ETSI documents as national and their notification to ETSI, as well as the withdrawal procedure for standards. These rules and procedures are in compliance with the Memorandum of Understanding signed between CRC and ETSI, and the Agreement for Cooperation and Joint Activity in the area of standardization signed between CRC and BDS.

In 2013, CRC took part in the amendment to the procedures of voting and approval of draft ETSI standards and standardization documents, as follows:

Table 14

2013	Number of processed documents	Number of procedures
Vote (TAP) – Voting (two-step procedure)	**27**	**17**
ENAP – One-step procedure	**50**	**20**
MV – Member voting	**26**	**16**
PUB – All weekly received documents	**1961**	

CRC notified ETSI electronically of the national standards published by BDS introducing the relevant ETSI standards.

In the past year, 55 ETSI standards and 13 standardization documents were introduced by endorsement as Bulgarian standards.

On its website, CRC maintains and updates on an ongoing basis the standards and standardization documents of ETSI on the different procedures that are available for all interested parties, including small and middle enterprises.

In the past 2013, representatives of CRC took part in the 61st General Assembly of ETSI.

2.2. Radio equipment and electronic communication terminal equipment

In the past year 2013, in compliance with Art. 269 of LEC, CRC received, through the European portal OSN (One Stop Notification) for electronic services at the Directorate-General for Enterprise and Industry of the European Commission, timely reviewed and stored 666 notifications for radio equipment which will be placed on the market. After an analysis of the received notifications concerning the ability to use frequency bands from the relevant radio equipment, 109 letters were sent by CRC. Thus, CRC informed the stakeholders about the inability of radio equipment to be put into service on the territory of the Republic of Bulgaria or the ability of some radio equipments to be put into service in line with the conditions and the relevant technical parameters specified in the Bulgarian secondary legislation.

The following chart displays, for comparison purposes, the number of received notifications and the number of letters sent by CRC, for the period from the creation of the European OSN portal in 2008 until the end of 2013.

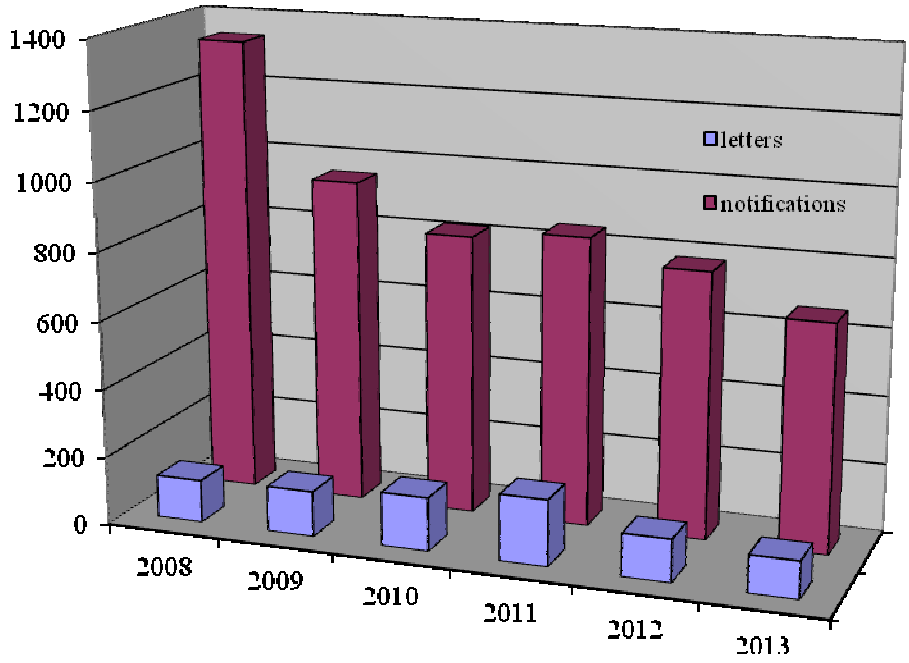


Figure 51

The decreased number of received notifications reveals the efficiency of the European OSN portal for the notification process under Art. 6, Section 4 of Directive 1999/5/EC.

2.3. Performance of obligations related to Chapter 15 of LEC

In 2013, CRC received notifications of breaches of security and loss of integrity of networks and/or services.

The received notifications were reviewed. The occurred incidents do not comply with the requirements for incident reporting, therefore the European Network and Information Security Agency (ENISA) was not informed thereof.

2.4. Electronic signature

The significant advantages of the electronic means of communication, among which is the electronic signature, are: the speed, the opportunity given to the business and the citizens to save time and money, the ensured independence in terms of time and place - one does not need to be present at a particular place to make a statement, the optimized work of the administration. These advantages are strongly felt by the companies in Bulgaria, and this the reason why in 2013 the trend towards a more frequent and wider usage of the qualified electronic signature (QES) is preserved. This is also confirmed by the fact that the QES certificates for legal entities which were issued and re-issued (renewed/rekeyed) in 2013, grew by 3.6%, as compared with 2012 (Figure 52).

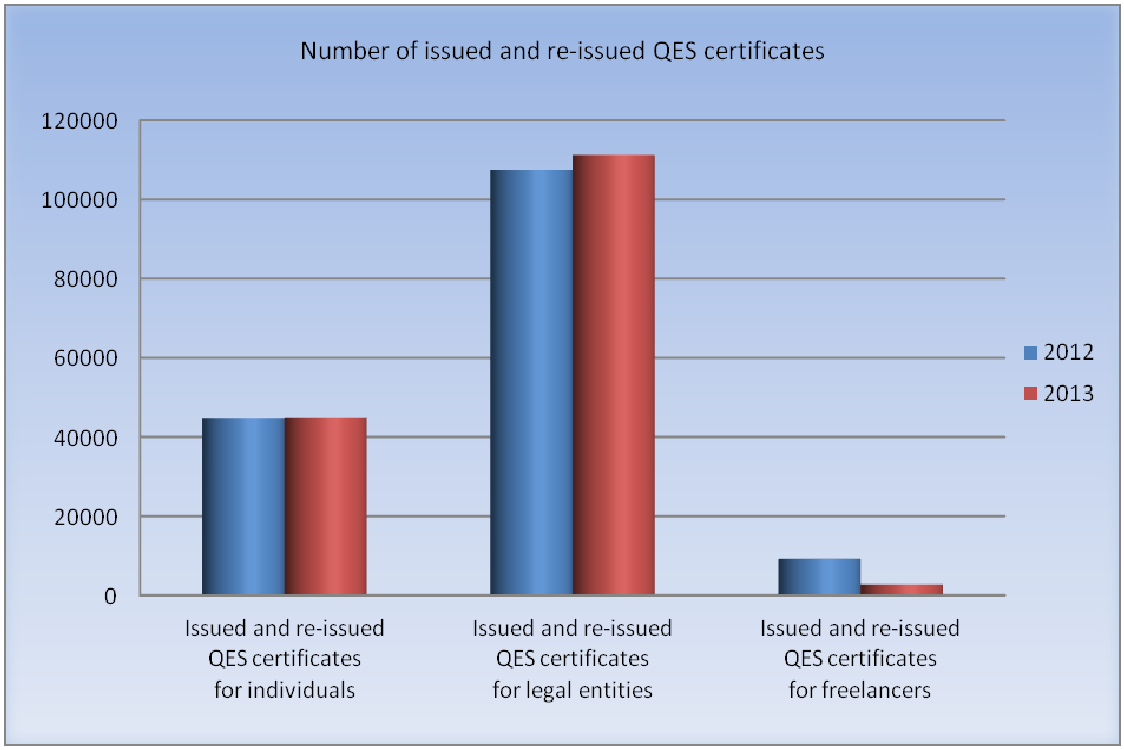


Figure 52

The Information and Communication Technology (ICT) market, a part of which are also the certification services, has not yet recovered from the adverse economic conditions of the past years, and forecasts show that the increase in revenue will be slight. In this regard, the preserved volume of annual income generated by the certification services providers (CSP) (Figure 53) may be accepted as yet another proof for growth in the field of application of QES.

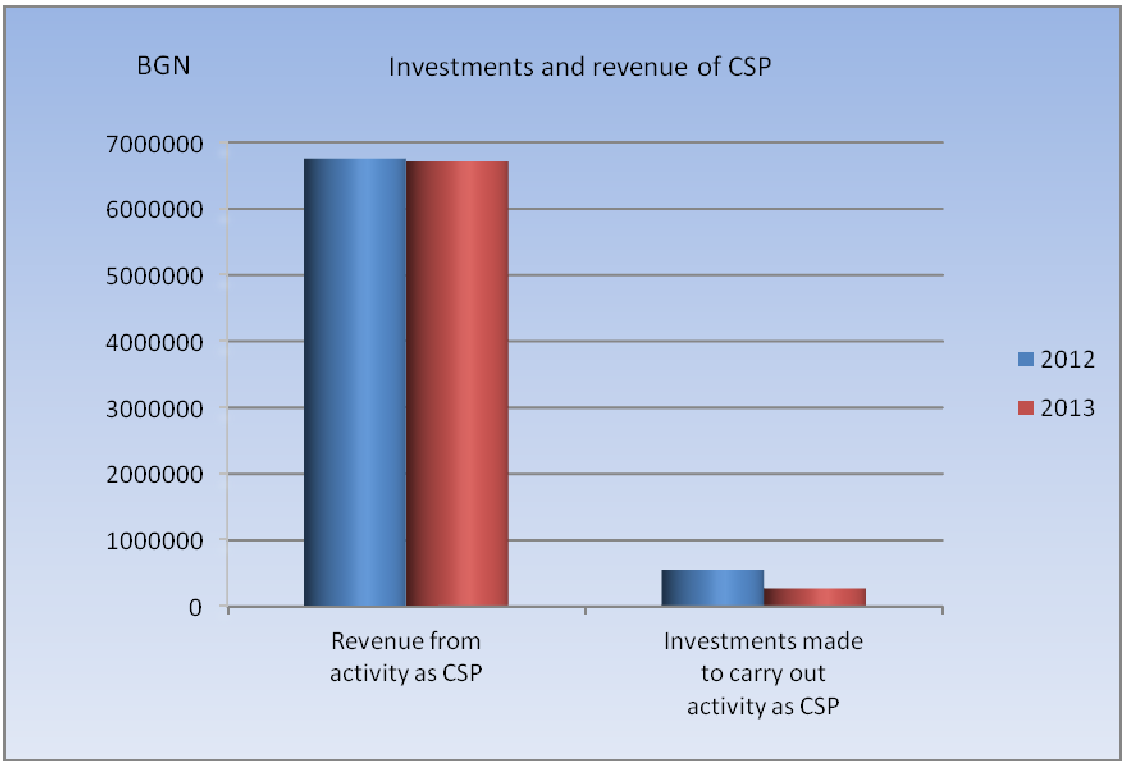


Figure 53

In 2013, CSP continued to provide other certification services and products, such as secure e-mail, time stamping services, software for electronic signing, encryption and secure storage of electronic documents, devices for secure storage of keys and secure creation of electronic signatures, warranted autonomous time, issuance of special-purpose certificates for secure identification and communication with a server, for signing and protection of software objects, for internal organizational purposes, etc.

A key moment of CRC's activity related to the electronic signature is the maintenance and publishing of a Trusted List (TL) of CSPs established/accredited on the territory of the Republic of Bulgaria, issuing QES certificates. In the past year, CSP notified CRC of changes in the data entered in the TL. This required the TL to be updated. The updated list was officially sent to the European Commission.

2.5. Communications control

In performance of its control functions, in 2013, the Commission observed the principles of the law, non-discrimination, transparency and protection of end users in the Republic of Bulgaria in strict compliance with LEC and the regulations in the area of electronic communications.

The territorial structure of CRC allows its control functions to be performed on the entire territory of the country by the main unit in the city of Sofia and by five regional units in the cities of Plovdiv, Burgas, Varna, Veliko Tarnovo and Vratsa.

2.5.1. Monitoring and control of the radio frequency spectrum for civil needs

The effective management of the radio frequency spectrum (RFS) requires a continuous monitoring and control. The RFS monitoring guarantees the normal work of the constructed radio networks without any harmful interference through timely localization and elimination of sources of radio interference and illegal broadcasting equipment. The role of RFS monitoring was also enhanced by the

development of technology and the need to provide up-to-date data on the spectrum availability in relation to its effective management. The availability of free RFS is getting more and more critical for both the introduction of new technology and the competition development.

The improvement of the electronic communications required greater flexibility in the RFS usage with the purpose of ensuring the highest possible volume of free radio frequency spectrum and least restrictive technical conditions for the undertakings providing electronic communications. Considering the growing number of users of services provided through the use of RFS, it is necessary to increase the role of monitoring for the effective management of this scarce national resource.

CRC performs the main activities related to RFS monitoring through the established National system for RFS monitoring. Periodic control was carried out through fixed and mobile stations for radio monitoring on the entire territory of the country to ensure non-discriminatory treatment of the lawful spectrum users and to guarantee a certain quality of the electronic communications services provided to end users. Special attention was paid during the year to monitoring in the bands for television broadcasting. With the purpose of creating conditions for trouble-free transition and successful launch of the digitization process, in execution of the 2012 Plan for digital broadcasting transition, special attention was paid throughout the year to monitoring in the bands for television broadcasting.

In 2013, the main RFS monitoring and control activities were as follows

- Monitoring and control of setting the conditions for **trouble-free introduction of terrestrial digital broadcasting -** performance of control and monitoring on the entire country's territory in relation to CRC decisions and commitments associated with the transition of the digital television broadcasting (2012 Plan for digitization):
  - Inspections for conformity of the broadcasting transmission station with the approved technical characteristics - 657 inspections were carried out for conformity of transmission stations for digital television broadcasting, in execution of CRC decisions;
  - Inspections concerning changed broadcasting channels of television transmission stations for analogue broadcasting of television signals in relation to release of frequency spectrum for introduction of digital broadcasting - 71 inspections were carried out, in execution of CRC decisions;
  - Control measurements according to the *Schedule for performance of control measurements for inspection of the coverage of networks for terrestrial digital broadcasting on the territory of the Republic of Bulgaria* - during the period from 23.04.2013 to 07.06.2013, 456 control measurements were performed in 152 measurement points on the entire territory of the country;
  - Measurements for assessment of the conformity of the actual coverage of terrestrial digital broadcasting networks with the theoretically determined one through a specialized software for planning in settlements with over 30,000 residents - from the beginning of November 2013 until the end of the year, mobile measurements were carried out the following settlements with over 30,000 residents: Stara Zagora, Kazanlak, Yambol, Sliven, Dimitrovgrad, Haskovo, Kardzhali, Plovdiv, Asenovgrad, Smolyan, Shumen, Dobrich, Ruse, Vratsa, Montana, Vidin, Lovech, Varna, Burgas, Pernik, Pazardzhik, Blagoevgrad, Kyustendil, Silistra, Dupnitsa, and in the largest part of the city of Sofia. The results from the mobile measurements showed the presence of good coverage on the territory of the above cities;

- Monitoring and control of the **conformity of the established broadcasting stations** for analogue terrestrial broadcasting of radio and television signals with the approved technical characteristics - to verify the conformity of the established broadcasting stations, 794 measurements were carried out in execution of CRC decisions.

The preventive control continues to play an important role in setting up conditions for the normal work of lawful spectrum users and for guaranteeing a certain quality of offered services to end users, as well as for prevention of the occurrence of interfering and illegal broadcasting. The electronic distribution to undertakings of the results of conducted scheduled monitoring and measurements, continued in 2013 (data was provided from conducted 12,465 measurements of basic technical parameters). In 2013, the trend was preserved towards maintaining the parameters of broadcasted radio and television signals within norms and reducing the generated out-of-band and intermodulation emissions, including in the range of the aeronautical service. As a result of the implemented preventive control of the radio frequency spectrum, recommendations were given to 14 undertakings (approximately 46% less than in 2012) for established deviations in the technical parameters, with a fixed period of up to 1 month for their elimination - all undertakings have taken the necessary actions.

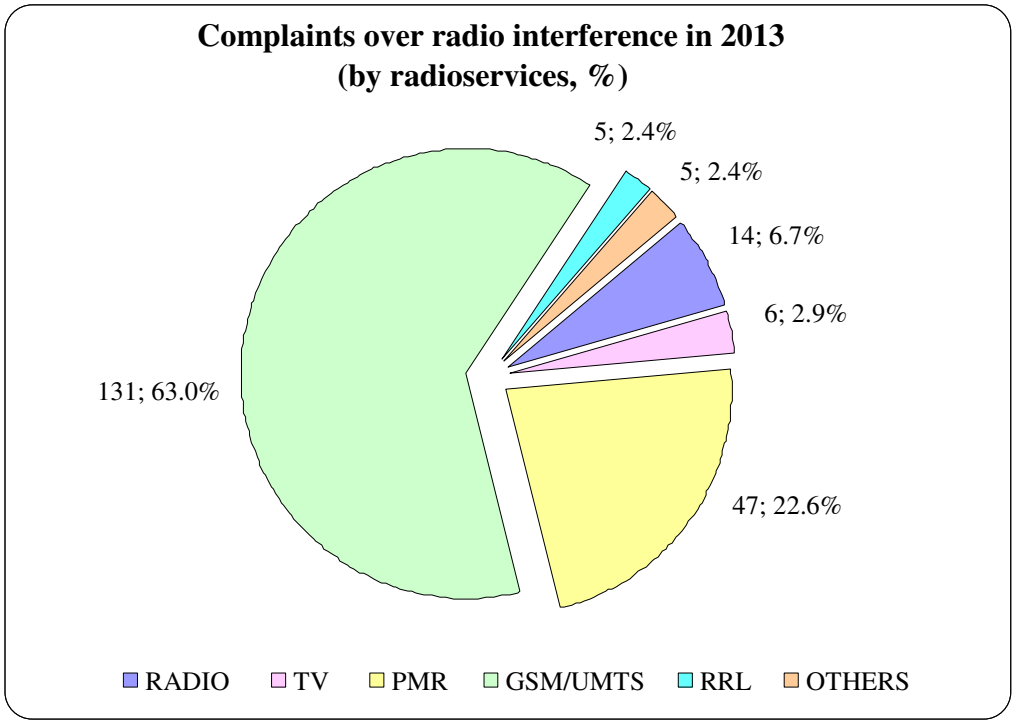
- Control regarding **conformity with the rules for the use of radio frequencies and radio frequency bands** for civil needs.

In implementing the policy for management of the radio frequency spectrum and the conditions of the issued authorisations, a scheduled daily monitoring was carried out in frequency bands 20÷3000 MHz. This was implemented through fixed (manned and unmanned) stations for radio monitoring by the National system for RFS monitoring, . Periodic control and monitoring was also carried out through mobile stations for radio monitoring on the entire territory of the country.

- Monitoring for **evaluation of the electromagnetic environment:**
  - Monitoring for evaluation of the **cross-border harmful interference** in the frequency bands of radio and television broadcasting – measurements for evaluation of cross-border harmful interference are carried out in the borderline areas of the country at an annual basis: 535 measurement protocols carried out on the territory of 93 settlements were summarized and analysed, concerning the intensity of the electromagnetic field and determining the direction of registered broadcasts from the territory of the neighbouring countries Turkey, Serbia, Romania, Macedonia and Greece; traditionally, attention was paid to the evaluation of the electromagnetic environment and cross-border harmful interference during the summer months on the Bulgarian Black Sea coast - within the framework of the created bilateral working group comprising experts of CRC and the Information and Communication Technologies Authority (ICTA) of the Republic of Turkey, the results of the performed measurements were provided to the Turkish party, and the International Telecommunication Union was informed; in 2013, it was once again established that the penetration of cross-border broadcasting along the Black Sea coast in the summer period is too much affected by the air temperature, by the sea temperature and the state of the sea. As a result of the actions undertaken during the past years, relatively lower levels of cross-border signals received from Turkish broadcasting stations were registered;
  - Monitoring for evaluation of the **electromagnetic compatibility** of VHF/FM radio broadcasting stations in the 87.5÷108.0 MHz band and the radio navigation and communication equipment of the aeronautical services using the 109÷137 MHz frequency band – to guarantee the electromagnetic compatibility and

trouble-free operation of the communication equipment of the aeronautical services, a measurement was carried out of radio centre "Vega", town of Simitli according to the *Methodology for measuring intermodulation products of type "A1", occurring during the operation of closely situated VHF-FM radio broadcasting stations (according to item 2.5. of Appendix 1 to the Technical requirements for operation of the electronic communications networks of the Radio broadcasting service and the related equipment);*

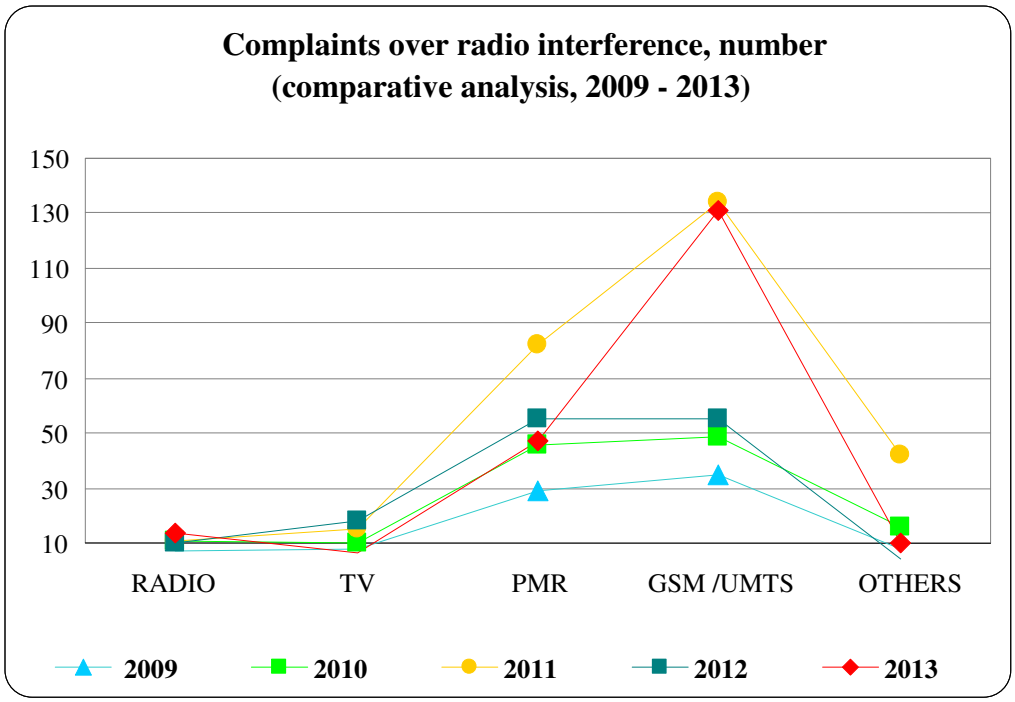
- Monitoring and control over the quality of provided services with a view to the **protection of public and consumer interest**:
  - Monitoring over received **complaints and signals** from lawful spectrum users, citizens, organizations and institutions – 208 cases of radio interference were examined in 2013 (Figure 54), and the necessary measures for quick localization and elimination of interfering sources were timely undertaken; in 2013, a relatively high share was held by radio interference resulting from electromagnetic incompatibility and mutual interferences as a result of the shared use of different technology in bands designated for the operation of mobile radio networks; there were also frequent cases of registered interference of terrestrial mobile networks resulting from the use of household devices by citizens (radiotelephones, "babyphones", etc.) imported from outside Europe (for instance, USA and Canada) or purchased online that operate in frequency bands which are not permitted on the territory of the Republic of Bulgaria.



Source: *CRC*

Figure 54

Figure 55 displays comparative analysis of radio interference cases solved in the period 2009-2013.

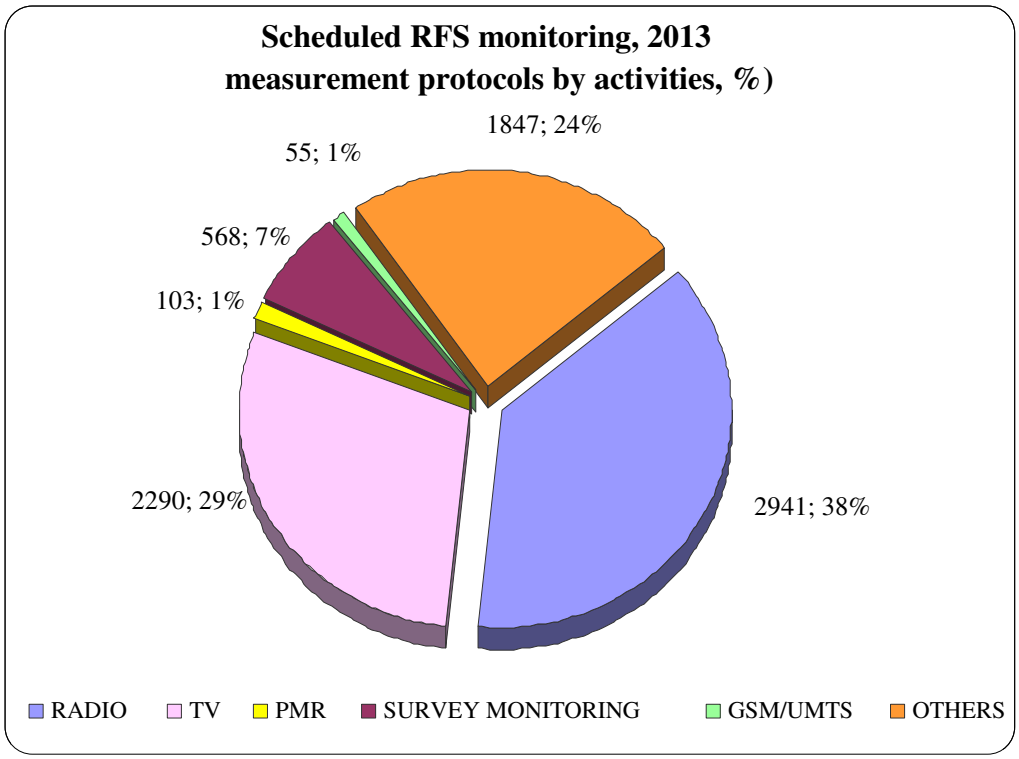


Source: *CRC*

Figure 55

- Monitoring and inspections concerning received complaints and signals related to the ensured **coverage** of the terrestrial digital television of DVB-T standard – measurements and inspections were carried out in relation to 127 complaints and signals. The results from the performed inspections under these complaints and other scheduled measurements were summarized in 1,105 measurement protocols;
- Monitoring for inspection of the **coverage and quality of services provided in the GSM and UMTS standard mobile networks** – measurements were carried out alongside 97 routes from the national road network; in relation to the performed scheduled monitoring and the complaints and signals filed (94 items), inspections of the coverage and quality of services provided in the GSM and UMTS standard by the three mobile undertakings were carried out; they were summarized in 237 measurement protocols

The results from the RFS monitoring and control carried out in 2013 were summarized in over **7800 measurement protocols** and their analysis by types of activities is displayed on Figure 56.



Source: CRC

Figure 56

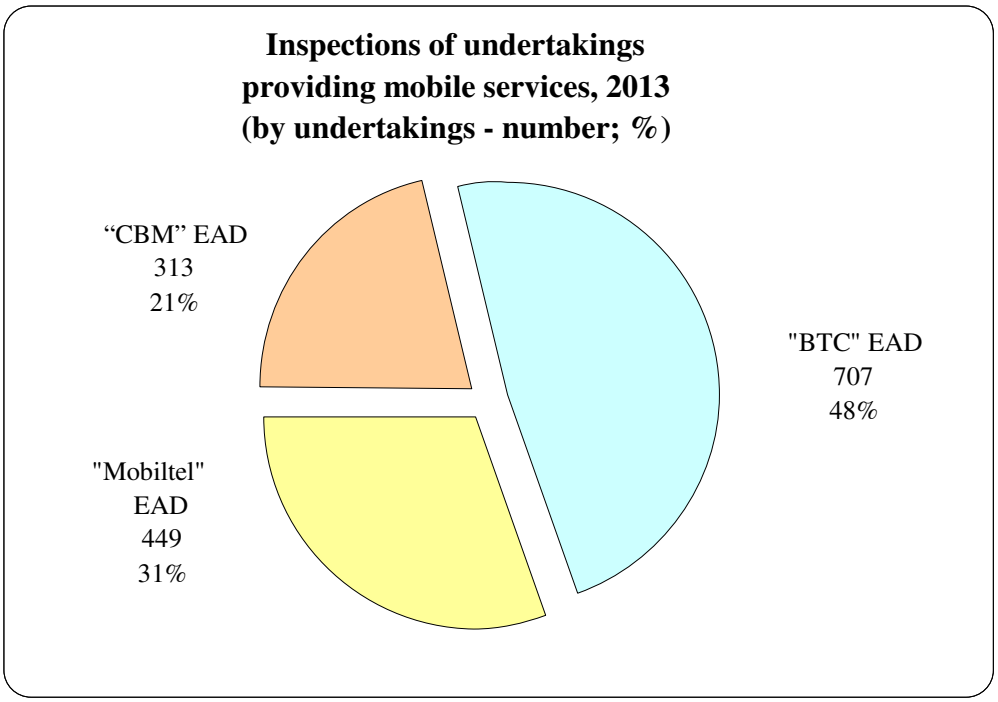
2.5.2. Inspection activity

In 2013, the CRC control activity related to electronic communications provision pursuant to LEC and in conformity with the requirements of LEDES, were focused on:

2.5.2.1. Monitoring on the provision of electronic communications under LEC:

In 2013, around 2850 inspections were carried out with regard to: portability of geographic, non-geographic and mobile network numbers; non-provision of detailed bills to end users; sending unwanted messages for direct marketing and advertising purposes without the prior consent of users; inaccurate charging of calls in international roaming; radio interferences; problems and/or absence of quality coverage by mobile networks; complaints for overcharged bills; problems with the quality of provided service; network security; confidentiality of messages and protection of users' personal data; execution of CRC decisions, etc.

Subject of about 52% of the inspections performed are undertakings providing public mobile telephone services - "Bulgarian Telecommunications Company" EAD – 707 inspections, "Mobiltel" EAD – 449 inspections, and "Cosmo Bulgaria Mobile" EAD – 313 inspections.

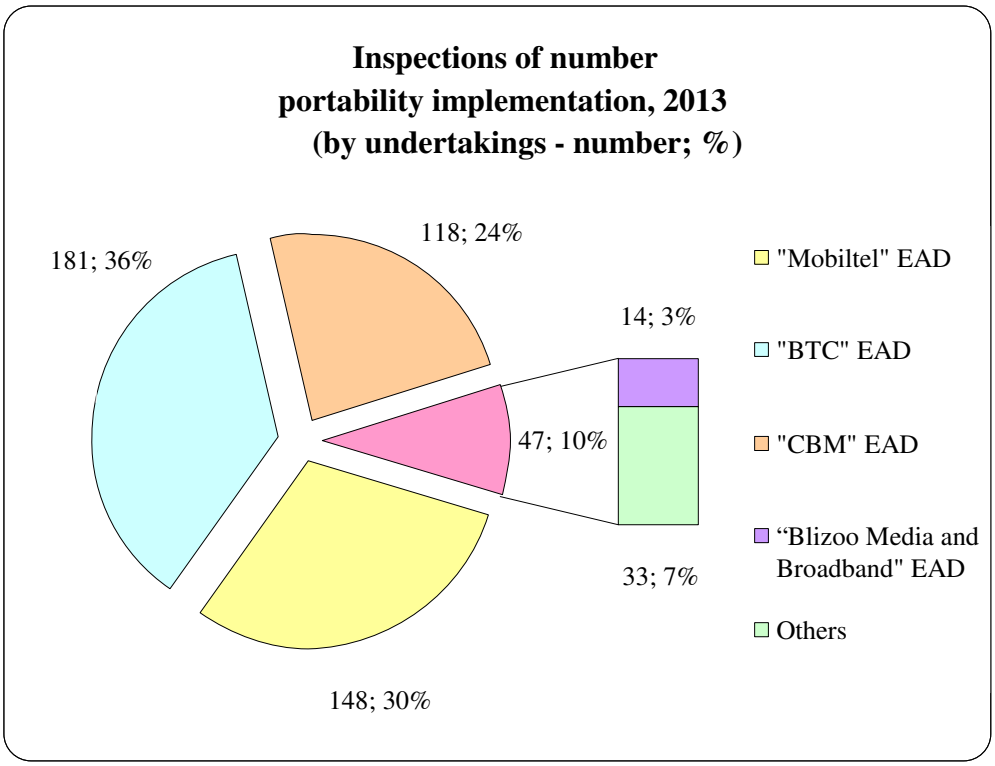


Source: CRC

Figure 57

The following main inspections were carried out for compliance with the requirements of LEC throughout 2013:

- Inspections related to solving problems in the **number portability implementation** in case of changing the telephone service provider: as a result of the changes to the Functional specifications for portability of geographic, non-geographic and mobile numbers in force as of 28.12.2012, a steady trend was observed in 2013 towards decrease in the number of complaints related to obstructing the users' right to portability of mobile and fixed numbers in the period 2010-2012; in 2013, 494 inspections were carried out for the observance of the above secondary regulations, as 349 inspections were related to problems in mobile numbers portability implementation, and 145 were related to solving problems in portability of geographic and non-geographic numbers; the breakdown of the performed inspections related to complaints over problems in number portability implementation by undertakings is presented on Figure 58.
  - a total of 68 acts of administrative violations (AOV) were drawn up to the three mobile services providers for violations of the Functional specifications for implementing portability of nationally significant numbers in case of changing the public mobile service provider, of which 32 AOV to "Mobiltel" EAD, 5 AOV to "Cosmo Bulgaria Mobile" EAD, and 31 AOV to the "Bulgarian Telecommunications Company" EAD;
  - a total of 34 AOV were drawn up for violations related to the Functional specifications for portability of geographic numbers in case of change of provider of fixed telephone service and/or change of address within the same geographic national destination code, of which 29 to the “Bulgarian Telecommunications Company” EAD, 3 to “Mobiltel” EAD, 1 to “Cosmo Bulgaria Mobile” EAD, and 1 to “Blizoo Media and Broadband” EAD;



Source: CRC

Figure 58

- Inspections for the **provision of the universal service** - in 2013, 66 inspections are accomplished for control on the compliance with the requirements for the provision of the universal service related to the quality of service; 33 AOV were drawn up for violations related to the provision of the universal service committed by the Bulgarian Telecommunications Company EAD;
- Inspections related to the **compliance with the provision of Chapter 14 of LEC and the protection of the interests of end users** concerning contracts for electronic communications services - 444 inspections are accomplished concerning complaints of subscribers over: turning fixed-term contracts into permanent ones; termination of fixed-term contracts with a one-month notice; general conditions of the contracts for electronic communications services; conditions and terms for payment of services offered; prices of services offered; requisites of contracts, etc.; 178 inspections were performed to "Bulgarian Telecommunications Company" EAD, 115 - to "Mobiltel" EAD, 80 - to "Cosmo Bulgaria Mobile" EAD, and 71 - to other undertakings providing electronic communications services;
- Inspections related to the **user data protection** (Chapter 15, Section III of LEC) – 214 inspections were carried out concerning: free-of-charge provision of itemised bills for used services; sending direct marketing and advertising messages; providing data on the personal number to third parties for collection of liabilities, etc. 46 AOV were drawn up for the established violations;
- Inspections of **electronic communication networks for terrestrial analogue and digital radio and television broadcasting** for compliance of the transmission stations with the technical parameters approved by CRC, as well as compliance with the conditions of the issued authorizations and of the *Technical requirements for operation of the electronic communications networks of the Radio broadcasting*

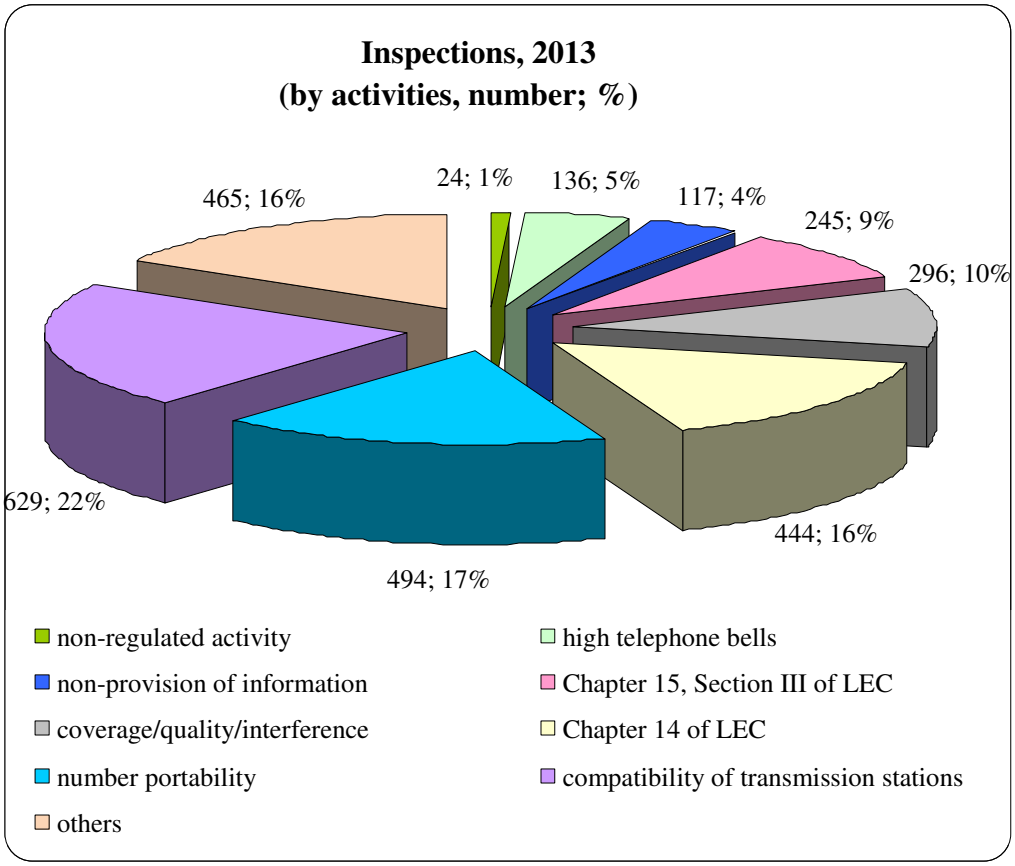
service and the related equipment - around 90% of the inspections performed in 2013 for compliance are of electronic communications networks for terrestrial digital television broadcasting with relation to the implemented digitization;

- Inspections of electronic communications networks of the **mobile radio PMR** on the effective use limited resources provided – RFS: 168 inspections were carried out to undertakings providing electronic communications for private needs via electronic communication network from a mobile radio service of the PMR type. 13 AOV were drawn up for violations found;
- Inspections of **cable electronic communication networks** for transmission and/or distribution of radio and television programs, for data transfer without use of scarce resource: 114 inspections were carried out and 72 AOV were drawn up, mainly related to non-fulfilled obligations of the undertakings to furnish CRC with activity report for 2012.

2.5.2.2. Control activity on the compliance with the requirements of LEDES:

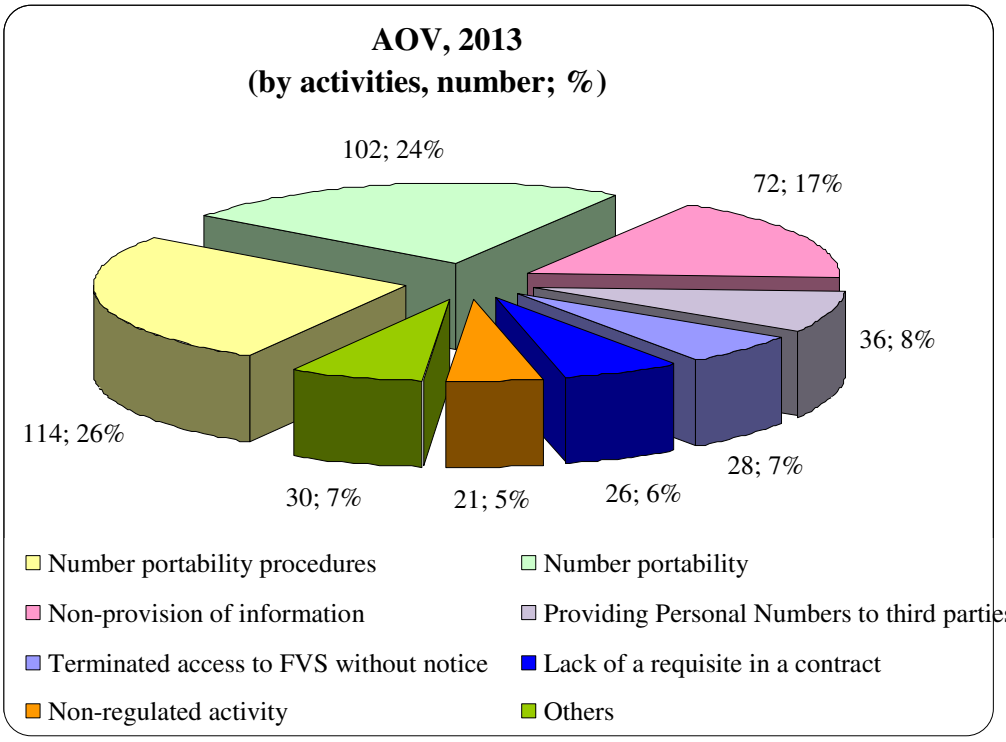
In 2013, 8 inspections were carried out on the fulfilment of the LEDES requirements - scheduled and with relation to 2 complaints received. Inspections were performed to the activity of "SEP Bulgaria" AD, "Infonotary" EAD, "Information service" AD, and "Borika-Bankservice" AD. The inspections covered the compliance with measures taken to guarantee safety and secure continuity of the providers' activity. 2 AOV were drawn up for violation of the LEDES requirements.

The summarized data for the performed control activity and the engaged administrative and punitive liability in violations of LEC and secondary regulations in 2013, are displayed on Figures 59 and 60.



Source: *CRC* **Figure 59**

As a result of the inspections, for the administrative violations of LEC found, 429 acts of administrative violations were drawn up and delivered in 2013. They are presented on Figure 60 by types of activities.



Source: CRC

Figure 60

2.6. CRC enforcement activity

To change the undertakings' behaviour in favour of users, in 2013, the Chairman of CRC issued 577 penalty notices (PNs) for established violations of the regulations controlled by the Commission. The total amount of sanctions determined by PNs is BGN 22,279,200.

Currently, 127 of the PNs issued in 2013 have entered into force, and the correspondence sets under which no voluntary payment has been effected were sent to the competent National Revenue Agency. The revoked PNs are 52. The remaining PNs are still being appealed before the relevant court (regional or administrative).

2.7. Analysis of complaints filed with CRC by users of electronic communications services

In 2013, a total of 3,291 complaints were filed with the Commission against different undertakings providing electronic communications services, including 166 inquiries under LEC. The reasons for referring to CRC with complaints are presented on Figure 61:

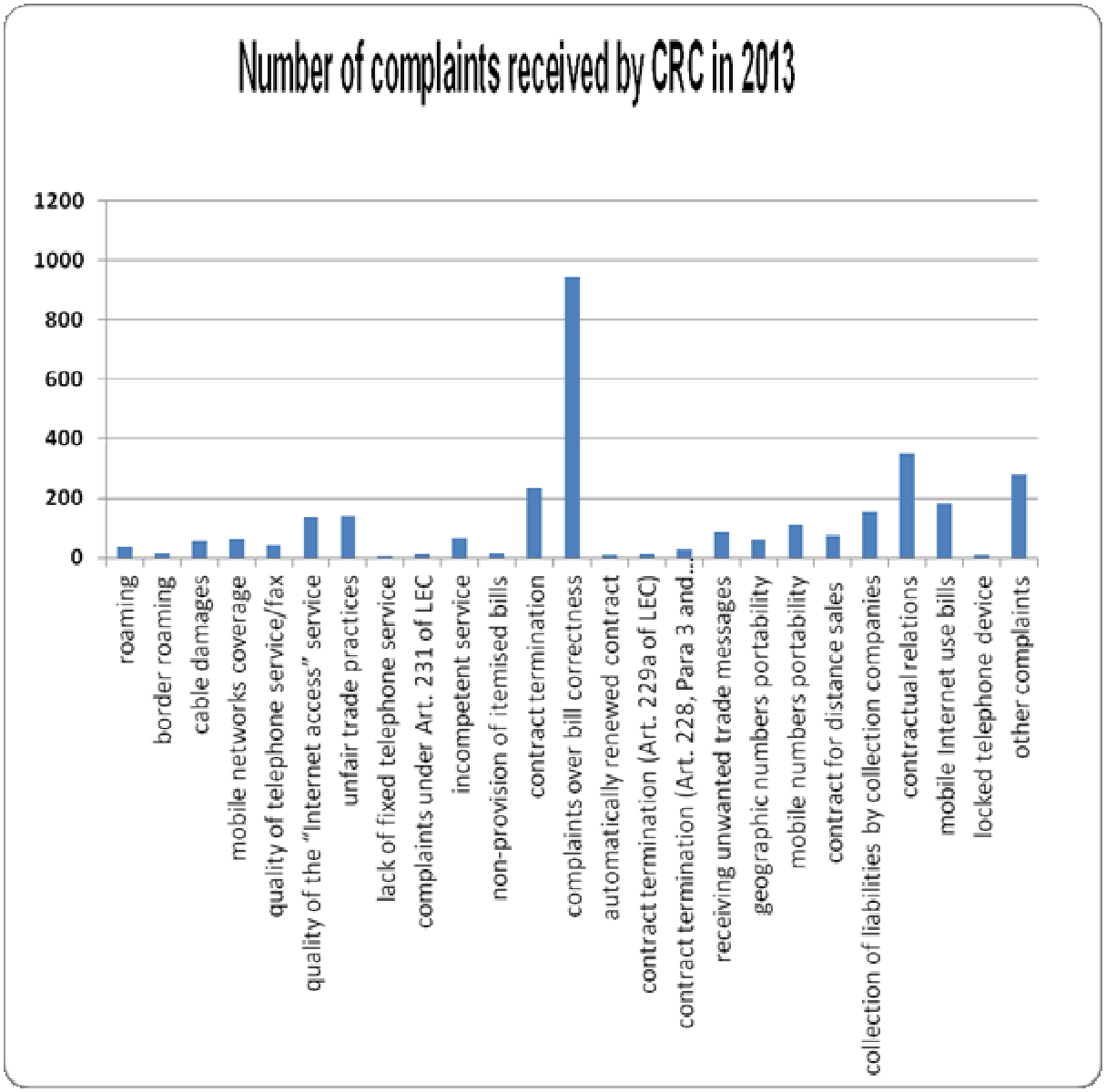


Figure 61

Based on the foregoing, it is clear that, compared to 2012, the total number of user complaints filed with CRC is down by over 30% in 2013. This is mainly due to the considerably lower number of complaints related to the telephone numbers portability.

Nearly 70% of the received complaints (2,110 complaints) refer to unfair trade practices, termination of contracts, complaints over bills (incl. for mobile Internet), telephone numbers portability, receiving unwanted trade messages and non-fulfilment of contractual obligations. To achieve a permanent solution of these problems, CRC took a series of actions within the scope of its powers to guarantee the high-level protection of the users.

By Decisions No. No. 201, 202 and 203 of 14.03.2013, CRC gave mandatory instructions to the providers of the number portability service to change the procedures for portability of mobile, geographic and non-geographic numbers. These instructions have lead to bringing the procedures and electronic systems for portability into compliance with the

new requirements of the functional specifications under Art. 134, Para 3 of LEC. This, on its part, reflected positively on the opportunity of each user to port easily (without unreasonable delay) the telephone number used, respectively - guarantees an efficient competition in the electronic communications sector.

As a result of the analysis of the complaints received in 2013, as well as of the results from the performed inspections of the undertakings' activity, the regulator identified a series of unlawful practices, namely:

- **In the points of sale (shops) of the undertakings, the General Conditions (GCs) adopted by the undertakings are not displayed in a visible place.** The same have not been provided to the inspection officers or have been provided on paper or electronically after an express and insistent demand (printed from the website of the undertaking or provided on a demo screen located in the relevant shop).

The above practice hampers and/or restricts the free access to the GCs of every user who visits a shop of the undertakings, as this access depends entirely on the will of the staff. The right to an informed choice of the user (to become familiar with the content of the GCs before signing a contract) is also affected, as an important condition for the existence of efficiently competitive retail markets. In practice, the only source of information on the GCs is the undertaking's website.

In addition, on inspecting the website of some of the large undertakings providing electronic communications services, it was established that the information on the GCs was not published in an easily accessible form in accordance with Art. 231a, Para 2 of LEC. The access to information on the GCs is ensured through an electronic link which is not visible to the subscriber on initial loading of the relevant website, or the electronic link is named in a way which makes its association with the relevant GCs difficult.

With this form of publishing information on the GCs, as used by the undertakings, the access to the electronic link may take place after additionally scrolling down the screen, respectively - after loading certain internal pages on the undertaking's website.

- **Unclear and inexhaustive individual contracts under Art. 228 and Art. 229 of LEC (ICs):**

The ICs are the main means for the users guaranteeing their opportunity to receive transparent, comparable and easily accessible information on the conditions under which they use the requested electronic communications services. The ICs also create legal security for the users in their relations with the undertakings providing public electronic communications services. In this respect, CRC established the following problems in the conclusion of ICs:

- lack of legislation regulating the form of IC and the order for its conclusion;

- the clauses concerning the IC's effective time are unclear, or there are no such clauses. This makes it impossible or difficult for the user to determine the exact effective date of the individual contract signed by them, respectively - to determine its expiry date. The cited information is exceptionally important for them with a view to the timely submission of one-month prior notice for contract termination, as well as with a view to the lawful exercise of the rights under Art. 228, Para 5 and Art. 229a, Para 1 of LEC;

- undertakings use small font for the IC clauses. Such approach does not allow the easy perception of the text by the user, which violates the requirement for easy access to the IC content introduced by Art. 228, Para 2 of LEC. This also affects the opportunity for the user to sign an IC on the basis of an informed choice after carefully getting familiar with the conditions under which they will use the undertaking's services. The use of small font for the IC's clauses affects to a great extent the interests of certain user groups, such as pensioners, people with impaired eyesight, etc.;

- the undertakings have included clauses in the IC beforehand pursuant to which the subscribers agrees: to receive messages for the purposes of direct marketing of goods and services of third parties; not to receive itemised bills under Art. 260 of LEC; not to receive itemised bill on paper; their personal data to be processed by the undertaking for certain purposes not included in LEC; the contract with the undertaking to enter into force immediately. In most cases, the consent of the subscriber is stated in the contract using the so called "check box". The latter is checked beforehand (before signing the contract) by an employee of the undertaking without the express consent of the subscriber to the relevant choice. Alternatively, the relevant clause is included in the IC form beforehand, which does not permit its removal or change in accordance with the user's will.

- the users sign an IC without getting familiar with its content. In practice, the users grant their consent to use the undertaking's service based on explanations and recommendations given by employees in the relevant shop;

- ICs do not contain the prices of services requested by the user, as well as all components of the selected tariff plan, tariff and/or bundle. This information is only accessible at the undertaking's website which is the only source of information for the user.

- **Lack of legal option for the subscriber to terminate the IC in case the latter has been unilaterally amended by the undertaking. Lack of legislation regulating the manner and form of notifying the subscribers in case of unilateral amendment of the IC.**

- **Lack of defence mechanisms when using the mobile data transfer service (mobile Internet access).**

The Commission established that the majority of high bills for use of electronic communications services result from the unintentional use of the mobile data transfer service. In this respect, some charging methods for mobile data transfer services lead to accumulation of considerable amounts consequently claimed by the undertakings. As a result, the users face the so called "bill shock". In addition to the harm caused to the users, this also has a negative effect on the development and broader penetration of mobile services.

- **A large part of the users cannot estimate the charging method for the used minutes against the total minutes included in the bundle.**

This effect cannot be overcome with the opportunity to monitor the consumption given by the providers because the information on the actually used minutes is processed later. The application of an initial billing period greater than 30 seconds and its combining with a subsequent billing period other than "per second" leads to an unreasonably high difference between the actually used minutes by the subscriber and those reported by the operator as used.

As a result of the established problems, CRC adopted Decision No. 928/19.12.2013 amending and supplementing the General requirements for the provision of public electronic communications (GR, SG, issue 4 of 14 January 2014). The main goal of the GR's amendment was to guarantee the right of the users to make informed decisions through:

- easy access of the users to the undertaking's general conditions - in the shops, these must be available on paper and placed on a visible place; on the Internet - the electronic link to the general conditions must be displayed on the first page and each internal page of the undertaking's website;

- **easy access of the users to the content of the individual contract -** the undertakings are obliged to furnish the subscriber with a copy of the concluded individual

contract on paper; before signing the individual contract, the undertakings are obliged to give the user the opportunity to become familiar with its content;

- **clear and comprehensible clauses of the individual contract, including writing them with an appropriate font size -** the individual contract must contain the exact date (day, month and year) of its entry into force. In case the IC has a fixed term, the same must contain the exact date (day, month and year) of its expiry; the IC clauses must be written with at least a 10-point font; certain clauses (concerning penalties, the order for termination and renewal of the contract, etc.) must be written in "bold" font of at least 12 points. These clauses must be included in the IC as last clauses, immediately before the space left for the subscriber's signature;

- **guaranteeing the express, free and informed consent of the user** to receive messages for the purposes of direct marketing of goods and services of third parties; not to receive itemised bills under Art. 260 of LEC; their personal data to be processed by the undertaking for certain purposes (for instance, their personal data to be provided to third parties - credit bureaus, receivables collection agencies, etc. with the purpose of preparing a credit assessment or collecting their receivables); the contract with the undertaking to enter into force immediately.

- **inclusion in the individual contract of a notice inviting the user, before signing the contract, to become familiar with its content and with the content of the applicable general conditions;**

- easy access to all elements and conditions of the selected tariff plan, tariff or bundle (prices, charging method, etc.) - the information must be available in the individual contract or in a separate document (annex) signed by the subscriber;

- **the right of the subscriber to terminate the individual contract without any sanctions if the same is amended unilaterally on initiative of the undertaking.** In this case, the undertaking notifies the subscriber of the amendment not later than 30 days before the amendment enters into force;

- defence mechanisms against high bills as a result of using the "mobile Internet" service - if the user has not selected any other financial limit of consumption, the undertaking is obliged to stop the access to the "mobile Internet" service on reaching the amount of BGN 50.00 (VAT exclusive). In addition, the subscribers shall be informed with an appropriate message (such as SMS) that they have reached 80 % of the set financial limit.

- **opportunity to select tariffs where billing is per second after the first 30 seconds –** the undertakings are obliged to offer to the users (physical and juridical persons) at least two tariffs applying an initial minimal billing period of up to 30 seconds for outgoing calls and then billing is per second, for each one of the following services: mobile telephone service of subscription plan; fixed telephone service of subscription plan; prepaid mobile telephone service.

In a series of cases, considering the nature of the dispute, CRC had no power to intervene. In this regard, the regulator requested statements with the purpose to mediate between the undertaking and the affected user. As a result of these actions, the undertakings complied with the CRC's recommendations, respectively - the problem was solved in favour of the subscriber.

There are also cases where, considering arguments of social nature set forth by CRC and placing the accent on the position expressed by the undertakings on applying socially-oriented policy in terms of the consumers, the applied mediation between the parties has succeeded in achieving voluntary settlement of the dispute between them and satisfying the users' claims.

In a series of cases, following the CRC's intervention, the claims of the subscriber were satisfied, and the user continued to use the undertaking's services, i.e. the dispute was voluntarily settled in favour of both parties. After CRC's intervention, large amounts for consumption of the mobile Internet service were reversed, as well as amounts exceeding the limit/maximum financial limit of consumption agreed in the contract. In some cases, the adjustment reached several thousand levs.

There are also cases where, after careful inspection, it was established that some additional conditions published on the undertaking's website are not clear enough and could be interpreted in different ways by the users. For greater transparency and accessibility of the information for users published online, **CRC requested some texts to be amended and made more precise**, including those concerning roaming services. The relevant undertaking has taken actions to timely amend the texts, as specified by the regulator.

CRC rendered assistance in numerous cases where, in the **process of changing their tariff plan,** the users have faced issues concerning the transition period to the new conditions and the volume of services they have the right to receive during the incomplete reporting period.

Numerous **inquiries were sent to different European regulatory authorities** to draw on their experience and practice on certain matters. The received replies contributed to taking efficient decisions that support and protect the interests of end users to the maximum extent.

In the cases where the Commission was addressed for problems related to customer service, the complaint was sent to the relevant undertaking to take the necessary actions.

In the cases of assertions on part of the consumer related to unfair trade practices or any other violations of the Law on Consumer Protection (e.g., violation of the rules regulating the contracts for distance sales), CRC referred to the Commission for Consumer Protection in a timely manner in order to take actions as a competent institution.