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

1. Activities in implementation of the CRC's priorities

1.1. Effective management of scarce resources

1.1.1. Radio frequency spectrum

One of the main priorities of the Commission is to ensure effective management and efficient use of the radio frequency spectrum in compliance with the EU policies. The radio frequency management is in accordance with the Updated electronic communications policy⁷², the State Radio Spectrum Planning and Allocation Policy and the Regulatory policy for radio frequency spectrum management for civil needs. In implementation of its powers, the

⁷² Prom. SG. No. 21 of 2015.

Commission applies the European Commission decision on harmonized use of the radio frequency spectrum.

The effective management of the radio frequency spectrum contributes the development of a competitive communications sector resulting in increasing of the social and economic benefits of its use. Thus, the frequency resource becomes a product of big importance for the whole society. In recent years, new technologies and applications using the radio frequency spectrum which provide high-speed services have been introduced in the telecommunication market. This in turn results in increasing of the interest and numbers of the users of high-quality innovative services. Creating conditions which promote the competition in the electronic communications sector allow the end users maximum freedom in selecting a variety of services with better quality and price.

In implementation of its priorities related to the effective management of the radio frequency spectrum, in 2017 the Commission carried out a number of activities in order to promote the introduction of new technologies and services in the market.

With regard to ensure conditions for efficient and harmonised use of 700 MHz band (694-790 MHz radio frequency band), so-called second digital dividend, the Commission representatives continued the activities started in 2016 on assessing the use of the 700 MHz band for civil needs and participated actively in the work of interdepartmental working groups with the following tasks:

- to prepare an analysis and proposals at expert level to take action on harmonisation of the 700 MHz frequency band and
- to prepare “national roadmap” adopting the national plan and schedule, including detailed steps to fulfil the obligations to Decision (EU) 2017/899 of the European Parliament and of the Council on the use of the 470-790 MHz frequency band in the Union.

As a result, the Commission adopted texts which were included in the National roadmap draft for the fulfilment of the Republic of Bulgaria obligations under Decision (EU) 2017/899 of the European Parliament and of the Council of 17 May 2017 on the use of the 470-790 MHz frequency band in the Union (National roadmap).

In order to fulfil the obligation of the Republic of Bulgaria under Decision (EU) 2017/899 and to ensure the radio frequency spectrum for wireless broadband networks, the Commission continued the activities started in 2016 related to the process of re-planning of the spectrum for terrestrial digital television in 470-694 MHz frequency band: negotiations, coordination, modification of the digital plan Geneva (GE06D) – 2006, transition to and introduction of the new plan for broadcasting in 470-694 MHz frequency band. In order to enable optimization and re-planning of digital television networks in Europe, within the South European Digital Dividend Implementation Forum (SEDDIF), in which Bulgaria is a member, an analysis and assessment for optimization of the 470-694 MHz radio frequency band for broadcasting were carried out. As a result, CRC representatives signed bilateral agreements on the new frequency plans for digital television in 470-694 MHz frequency band with the Republic of Greece, the Republic of Macedonia, Romania, the Republic of Serbia, the Republic of Turkey and Ukraine. Having signed these agreements Bulgaria became one of the first European countries that has kept the deadline under Decision (EU) 2017/899 for signing bilateral agreements on the new frequency plans. The South European Digital Dividend Implementation Forum which was held in December 2017 finished its work by signing of the Multilateral Framework Agreement between the administrations of Albania, Austria, Bosnia and Herzegovina, Bulgaria, Croatia, Greece, Former Yugoslav Republic of Macedonia, Hungary, Montenegro, Romania, Serbia, Slovenia, Turkey and Ukraine on the frequency plan for the future digital terrestrial television in the frequency band 470-694 MHz.

Bulgaria is one of the last EU Member States that has not allocated radio frequency spectrum in the 800 MHz band (790-862 MHz radio frequency band), so called first digital

dividend. Related the above, in order to ensure conditions for effective and harmonized use of the radio frequency spectrum in 800 MHz band, the Commission took actions to issue temporary authorisations for the use of radio frequency spectrum in 800 MHz band for conducting technical tests to detect the absence of interference in operation of The Ministry of Defence radio equipment. With the amendment of First Digital EAD license to use individually assigned scarce resource – radio frequency spectrum for carrying out electronic communications through electronic communication network for terrestrial digital broadcasting with national coverage, the 64th- channel was released for use as a first digital dividend.

Public consultations on issues of public importance for electronic communications development were conducted. They aimed to study the business interest to available spectrum.

In order to ensure conditions for effective use of the radio frequency spectrum in 1800 MHz band, public consultations were conducted in the second half of 2017. They concerned with the way of scarce resource provision of the radio frequency spectrum in 1800 MHz band. As a result of applications submitted by three undertakings, it was clear that the available resource was not enough for all applicants. Soon the Commission is taking a decision how to distribute and provide the available radio frequency spectrum in 1800 MHz band.

Taking into account the available radio frequency spectrum in 1.5 GHz, 2 GHz, 2.6 GHz and 3.6 GHz bands, CRC conducted public consultations on the prospects for use of the available radio frequency resource in these bands. Within the procedure there was no interest in using the available recourse and no tender procedure for the provision of radio frequency spectrum was launched.

With regard to the rapid development of 4th generation electronic communication networks, as well as the forthcoming introduction of the 5th generation, in 2017, the Commission conducted public consultations on issues connected to the prospects for the use of the 92-95 GHz radio frequency band. Some undertakings were interested in usage of this frequency resource. As a result, the 92-95 bands were designated for use by fixed radio networks.

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

Following one of its main priorities – effective management and efficient use of the scarce resource – radio frequency spectrum, CRC has studied and analysed the necessity of amendment and supplement of the secondary legislation relating to the management of the radio frequency resource. As a result of this analysis the following secondary legislative acts were amended and supplemented:

- Rules for carrying out electronic communications through radio equipment using radio frequency spectrum, which does not need to be individually assigned (The Rules);
- Technical requirements for operation of the electronic communication networks of the broadcasting radio service and related equipment;
- Technical requirements for operation of electronic communication networks of the fixed radio service and related equipment.

With the amendment and supplement of the mentioned acts in the Bulgarian legislation, the provisions of the new decisions of the European Commission and the Electronic Communication Committee (ECC) for harmonized use of the radio frequency spectrum ⁷³ have been introduced.

⁷³Commission Implementing Decision (EU) 2017/1438 of 4 August 2017 amending Decision 2007/131/EC on allowing the use of the radio spectrum for equipment using ultra-wideband technology in a harmonized manner in the Community:

In December 2016, the Law on Electronic Communications (LEC) was amended and Art. 265 was deleted. According to that article CRC prepared and updated the List of radio equipment using frequency bands harmonized throughout the EU and electronic communications terminal equipment (List). The repeal of the provision resulted in the need that radio equipment technical parameters as well as the requirements connected to no-interferences when using the radio frequency spectrum defined so far in the List, to be included in the Rules.

Through amendment and supplement of the Rules, in compliance with Implementing Decision (EU) 2016/2317, the terms and conditions for use of radio frequency spectrum by radio equipment of electronic communication networks for providing mobile communications services on board aircrafts (MCA devices) were determined. In compliance with Implementing Decision (EU) 2017/191/EC the terms and conditions for use of radio frequency spectrum by radio equipment of electronic communication networks for providing mobile communications services on board vessels (MCV services) were determined. In compliance with Implementing Decision (EU) 2017/1438 and Implementing Decision (EU) 2017/1483, the Commission identified new radio frequency bands and conditions for their use by devices using ultra wideband technology and short-range devices. The radio frequency 863-868 MHz band was designated to be used by wideband data transmission systems, 865-868 MHz band – for use by data networks, and 76-77 GHz band – for use by obstacle detection radars for rotorcraft use.

For the implementation of the conditions of the amended recommendations ERC/REC 70-03⁷⁴ and ERC/REC 25-10⁷⁵, the radio frequency bands 1350-1400 MHz and 1518-1525 MHz were allocated to use by radio microphones.

In compliance with Decision (EU) 2017/1483 and Recommendation ERC/REC 70-03 the conditions for use of radio frequency spectrum by short-range devices were updated. The conditions for the use of 446 MHz radio frequency range were amended in relation of the amendment of Decision ECC/DEC (15)05. In compliance with ECC decisions, other conditions for use of radio frequency spectrum which is not need to be individually assigned were also amended. Radio frequency bands 315-600 kHz and 12500-20000 kHz for use by active medical implant devices were deleted from the Rules in compliance with Implementing Decision (EU) 2017/1483 and 870.0-875.8 MHz band for use by transport and traffic telematics devices was deleted from the Rules in compliance with Recommendation ERC/REC 70-03. The conditions for the use of radio frequency spectrum by satellite terminals in the airport areas also were amended.

The standards in the Rules were amended in compliance with the new Bulgarian standards which introduce harmonised European standards, as well in compliance with the new and updated standards of the European Telecommunications Standards Institute (ETSI).

Commission Implementing Decision (EU) 2017/1483 of 8 August 2017 amending Decision 2006/771/EC on harmonisation of the radio spectrum for use by short-range devices and repealing Decision 2006/804/EC.

Commission Implementing Decision (EU) 2016/2317 amending Decision 2008/294/EO and Implementing Decision 2013/654/EC, in order to simplify the operation of mobile communications on board aircraft (MCA services) in the Union

Commission Implementing Decision (EU) 2017/191 amending Decision 2010/166/EU, in order to introduce new technologies and frequency bands for mobile communication services on board vessels (MCV services) in the European Union

ECC/DEC (15)05 on the harmonised frequency ranged 446.0-446.2 MHz, technical characteristics, exemption from individual licensing and free carriage and use of analogue and digital PMR 446 applications

Recommendation ERC/REC 70-03 relating to the use of short-range devices

Recommendation ERC/REC 25-10 relating frequency ranges for the use of terrestrial audio and video PMSE applications

⁷⁴ ERC/REC 70-03 relating to the use of short-range devices

⁷⁵ ERC/REC 25-10 - frequency ranges for the use of terrestrial audio and video PMSE applications

In order to implement a part of the provisions of Implementing Decision (EU) 2010/267/EC⁷⁶ Technical requirements for operation of electronic communication networks of broadcasting radio service and related equipment were amended and supplemented. The amendment clarified the texts related to the provision of conditions for the development of DVB-T2 technology and the process of re-planning of terrestrial digital television broadcasting in the bands below 694 MHz, as well as the creation prerequisites for development of digital networks for radio broadcasting in radio frequency band 174-230 MHz.

Technical requirements for operation of electronic communication networks of the fixed radio service and the related equipment were amended in connection with the need of falling off the radio frequency range 11.7-12.5 GHz, which was designated for the broadcasting satellite service by the World Radio Communication Conference Decision. Through this amendment, the radio frequency band 92-95 GHz was designated for use by networks of the fixed radio service in compliance with Recommendation ECC/REC/(14)01⁷⁷. For the efficient and effective use of radio frequency spectrum, the technical parameters of the specific ranges were updated.

In accordance with the amendments and supplements of the above secondary legislative acts in the ECO Frequency Information System (EFIS), the data on the usage of the frequency resource in the Republic of Bulgaria has been updated.

In 2017, the CRC continued to raise issues of public relevance for the development of electronic communications respecting the principles of transparency, publicity and consultation underlying the LEC provisions.

At the end of 2016 amendment and supplement of the LEC entered into force and as a result, the restrictions hampering competition in the digital terrestrial television market were removed. It allowed all interested parties to take part in a competitive procedure. Taking into account the public significance of the digital terrestrial television as the main means of free access to TV programmes in the country and in order to create conditions for development of competition when providing the service, CRC conducted public consultations procedure on conditions for issuing an authorization for use of individually assigned resource – radio frequency spectrum for electronic communications through electronic communication network for digital terrestrial broadcasting in national range. The CRC's aim was to announce its intention to conduct a contest for issuing of an authorization. Within the procedure no specific proposals were made.

Later, CRC announced public consultations on its intention to conduct a contest for issuing an authorization for use of individually assigned resource – radio frequency spectrum for electronic communications through electronic communication network for digital terrestrial broadcasting in national range. Within the procedure no applications for intentions of using of individually assigned resource – radio frequency spectrum was submitted. Finally, CRC did not announce a contest for issuing an authorization for use of individually assigned resource – radio frequency spectrum for electronic communications through electronic communication network for digital terrestrial broadcasting with national coverage.

Taking into account the spectrum available in radio frequency ranges 174-230 MHz and 526.5-1606.5 kHz, the Commission conducted public consultations on the prospects for the introduction of terrestrial digital sound broadcasting of radio signals in these ranges. As a result, the main interest was only for terrestrial radio broadcasting in frequency band 174-230 MHz.

⁷⁶Commission Decision (EU) 2010/267 on harmonised technical conditions of use in the 790-862 MHz frequency band (800 MHz band, called “digital dividend”) for terrestrial systems capable of providing electronic communications services in the European Union

⁷⁷Recommendation ERC/REC 14(01) for radio frequency channel arrangements for fixed service system operating in the band 92-95 GHz

Mobile radio service

In 2017 CRC issued two temporary authorisations for the use of individually assigned scarce resource - radio frequency spectrum in 2 GHz range, respectively to:

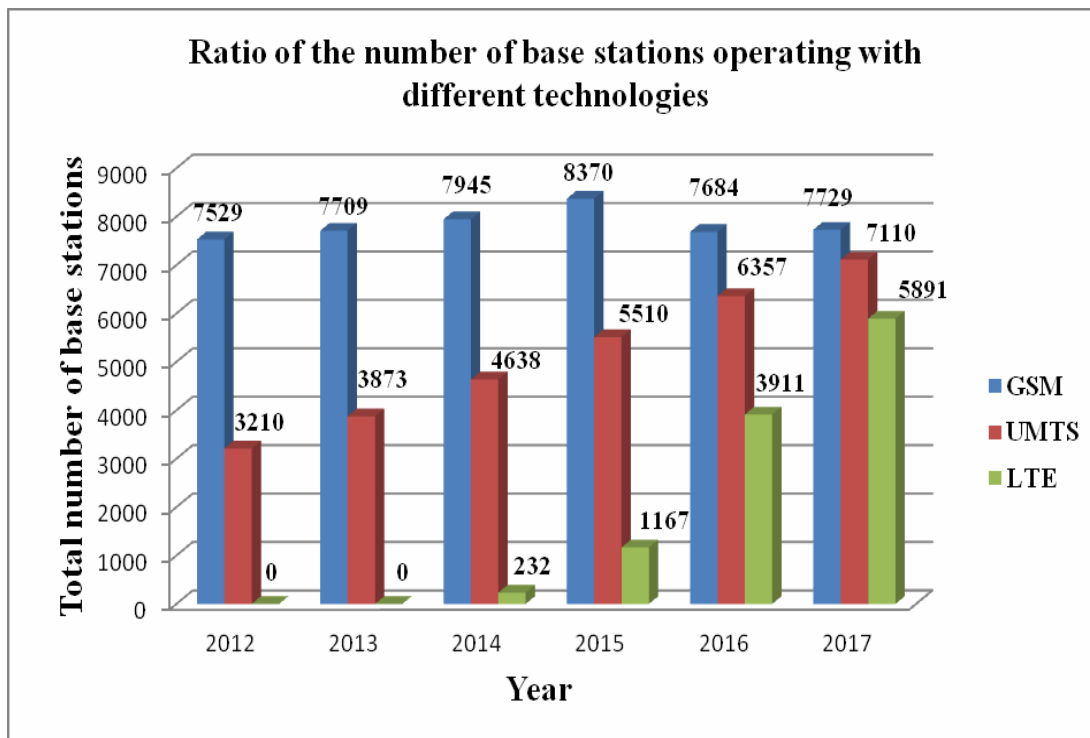
- TELENOR BULGARIA EAD with assigned frequency resource of 2x15 MHz for testing new methods and/or technologies for electronic communications in LTE network of the undertaking;
- BULGARIAN TELECOMMUNICATION COMPANY EAD with assigned frequency resource of 2x15 MHz for testing new technical equipment for electronic communications in LTE network of the undertaking.

BULGARIAN TELECOMMUNICATION COMPANY EAD was issued a temporary authorisation for the use of individually assigned scarce resource - radio frequency spectrum 2x20 MHz in 2.6 GHz range for testing new technical equipment for electronic communications in LTE network of the undertaking.

In 2017 was amended the issued authorisation of NATIONAL RAILWAY INFRASTRUCTURE COMPANY for the use of individually assigned scarce resource – frequency spectrum for provision of electronic communications for own needs through terrestrial mobile GSM-R network. With the amendment the enterprise was provided frequency resource in 876-880/921-925 MHz bands for railway line Sofia - Proslav.

After an analysis of the radio frequency spectrum assigned for use and a national coordination and agreement of radio frequencies and frequency bands with all state authorities, departments and agencies concerned, 137 radio frequency channels (81 simplex and 28 duplex) were provided to the undertakings, of which 78 radio frequencies for the construction of 57 new radio networks for the provision of electronic communications for own needs through mobile radio service electronic communication network. The total number of built networks reached 1936.

In Fig. 35 is graphically presented the ratio of the number of base stations operating with different technologies. As evident, for a consecutive year the number of base stations operating with LTE technology increased significantly. The rapid introduction and penetration of LTE systems was due to the need to meet the exponentially growing users' needs for high speeds resulting in increase of the broadband traffic.



Source: CRC

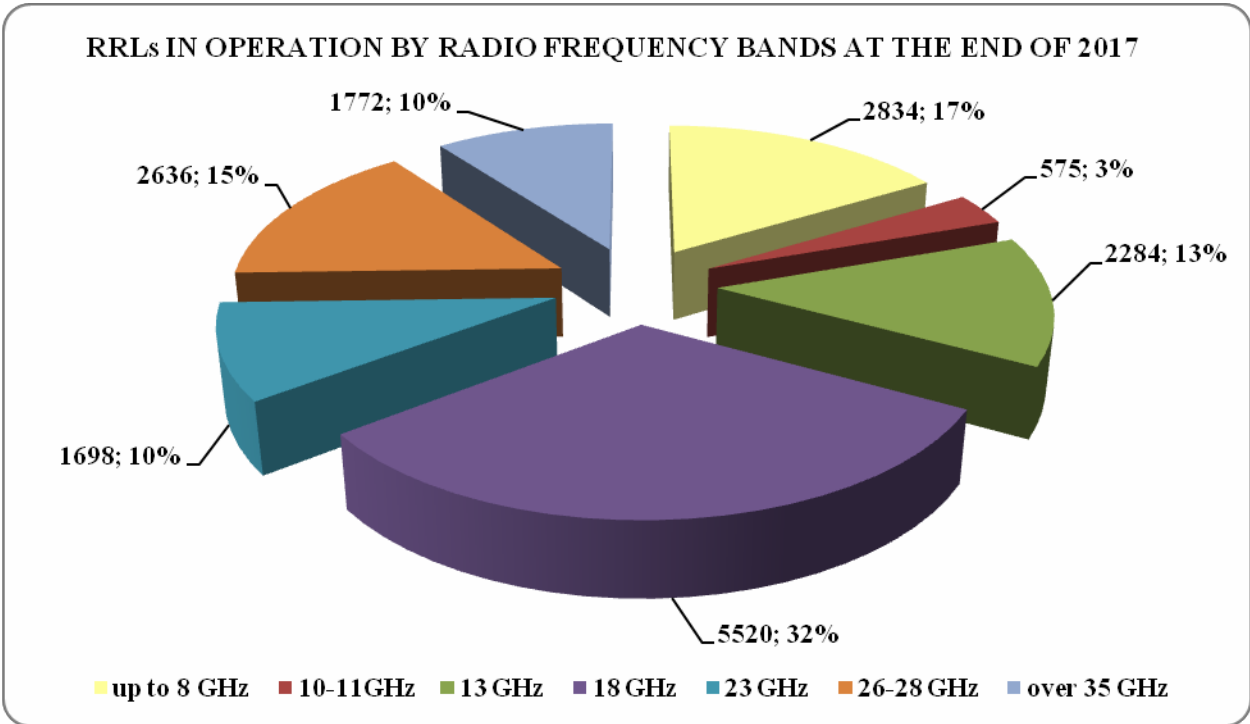
Fig. 35

Fixed radio service

In 2017, 48 amendments and supplements were made to the technical data of a total of 4370 uni-directional radio relay links (RRLs), including the provision of radio frequency spectrum to 886 new links, thus their total number decreased to 17319 compared to 17880 for 2016 i.e. the number of operating RRLs decreased by 3,2% compared to the end of 2016. The trend for deployment of high-tech digital systems using XPIC/CCDP technologies continued, as the number of RRLs using these systems reached 8618 at the end of 2017 (an increase of 6,5% compared to 2016 – 8092 links).

Growth in the use of high-frequency bands was reported again, compared to the total number of RRLs. In the 18 GHz band their number reached 5520 (5528 in 2016), which retained the share of 32% in the total number of RRLs at the end of 2017. The construction of high density electronic communication network using the highest-frequency ranges continued. At the end of the year the RRLs in the 23 GHz, 26 GHz, 28 GHz, 38 GHz and 76 GHz bands, for which their authorisations were issued for the use of the frequency spectrum, numbered 6106. The percentage ratio of the five bands was about 35% of the total number of RRLs. In 2017 the coupled radio frequency bands 74-76 GHz and 84-86 GHz usage for high-capacity RRLs continued as their number reached 128 links at the end of the year.

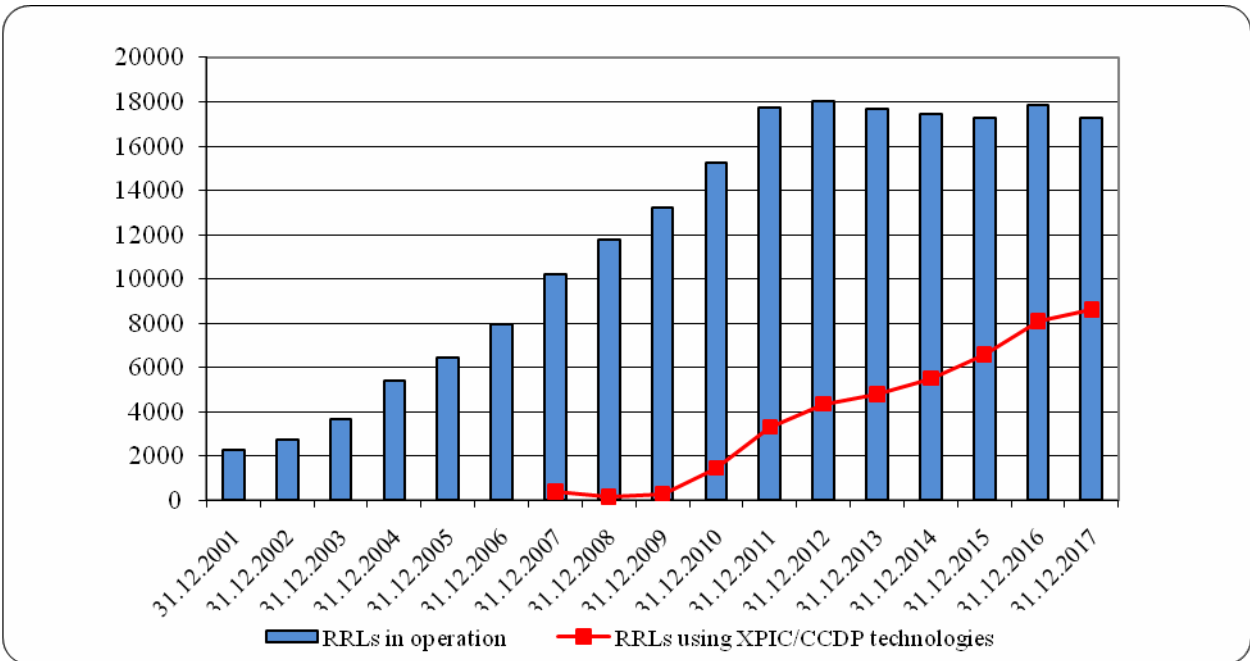
Fig. 36 presents information on the share distribution of the existing RRLs authorised for usage of individually assigned scarce resource – radio frequency spectrum for the provision of electronic communication of the point-to-point type, by radio frequency bands at the end of 2017.



Source: CRC

Fig. 36

Fig.37 presents the operating RRLs by years, compared with the part of them which uses XPIC/CCDP technologies.



Source: CRC

Fig. 37

The main purpose of the electronic communications networks using radio frequency spectrum of 92-95 GHz band is the construction of high-capacity radio relay lines with speeds up to 10 Gbit/s and distances up to 1-2 km with direct visibility. The data transfer speed of the networks operating in that band is comparable to that of the optical lines. By definition of the conditions for the use of 92-95 GHz radio frequency band in the Technical requirements for

operation of electronic communications networks of the fixed radio service and the related equipment, the undertakings providing electronic communications services were provided by new opportunities for ultra-wideband transfer via a viable wireless alternative of communications networks with optic-based solutions.

Satellite radio services

In 2017 the activity related to regulation of satellite radio services was focused on the coordination of the positions using geostationary orbit from the fixed-satellite (FSS) and broadcasting-satellite (BSS) radio services. The successful launching the first Bulgarian satellite in June 2017 increased considerably 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 carry out the coordination activities, analysis was performed of the biweekly circulars (BR International Frequency Information Circular - BRIFIC), issued by the Radio Communication Bureau of the International Telecommunication Union (ITU), using specialised software products provided to the administrations. Except for the analysis of the biweekly circulars, an analysis was also made of the received proposals from other administrations to conclude agreements with a view to the successful coordination of the Bulgarian satellite systems.

After analysing all biweekly circulars for 2017, the relevant objections were sent to comply with the regulatory function of the CRC regarding the efficient use and effective management of scarce resource – radio frequency spectrum.

Last year CRC submitted applications for international coordination of BUL-QV-1.9E satellite system for a position on the geostationary orbit 1.9 E in 40/50 GHz ranges. In order to achieve the objectives of the LEC, the Commission submitted an application for international coordination of the nano-satellite EnduroSat 1 on a non-geostationary orbit operating within the dedicated range for amateur-satellite service. The first for the republic of Bulgaria satellite in non-geostationary orbit has not been employed for commercial communications. Its purpose is to support the practical training of student for communication through satellite terrestrial station. It is foreseen the exploitation period of the satellite to be 6 months; the launch is scheduled for 2018.

In 2017 in accordance with the terms of the Radio Regulation continued the activity on the procedure for notification of the additional application for modification of the BSS plan on position of the geostationary orbit 1.9° E.

Broadcasting

In 2017 in relation to the request of the Council for Electronic Media (CEM) for the provision of free frequency resources for 3 settlements concerning procedures to hold a competition, information was provided on 9 frequency assignments in the VHF band for the towns of Troian, Vidin and Pestera, including technical parameters, admissible powers, points of broadcasting as well as other technical information.

A total of 69 technical characteristics of electronic communication networks for terrestrial analogue broadcasting of radio signals in VHF range (frequency band 87.5-108.0 MHz) were examined and analysed, of which 7 were of undertakings, authorised to use individually assigned scarce resource – radio frequency spectrum for carrying out electronic communications through electronic communication network for terrestrial analogue broadcasting with national coverage, and 62 – of undertakings authorised to use individually assigned scarce resource – radio frequency spectrum, for carrying out electronic

communications through electronic communication network for terrestrial analogue broadcasting with local coverage.

In 2017 CRC issued to ET DIP TREYDING _ PAVEL KOSTADINOV a temporary authorisation for the use of individually assigned scarce resource - radio frequency spectrum for electronic communications through electronic communication network for digital terrestrial broadcasting for the territory of city of Sofia in order to test new technical methods and technologies (T-DAB+). In this respect, 4 technical characteristics of the electronic communication network for digital terrestrial broadcasting of radio signals were examined and analysed.

With regard to authorisations for digital broadcasting of television signals with national coverage, in 2017 CRC terminated upon withdrawal HD MEDIA SERVICES LTD and FIRST DIGITAL EAD authorisations and terminated BULSATCOM EAD authorisation.

National and international coordination

In 2017 in the Advisory Council for national coordination and agreement to the CRC 2418 radio frequencies and frequency bands were coordinated and agreed. National coordination and agreement with all state authorities, departments and agencies concerned are 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 9 radio frequency assignments was carried out with relevant technical parameters, according to the Regional Agreement for usage of the 87.5-108.0 MHz radio frequency band for VHF (FM) sound broadcasting, Geneva, 1984 (Geneva – 1984).

In the past year all publications in biweekly circulars BRIFIC for terrestrial radio services were processed and analysed. As a result, 51 radio frequency assignments of foreign administrations with relevant technical parameters according to the Regional Agreement, Geneva – 1984 were coordinated, while to 2 radio frequency assignments objections were made due to possible interference to Bulgarian radio stations.

The Radio Communication Bureau was sent a request for addition of 28 radio frequency assignments of Bulgarian VHF radio stations in Plan Geneva – 1984, and 31 radio frequency assignments were recorded in Part B of Plan Geneva-1984.

In 2017, 106 radio frequency assignments were recorded in Plan Geneva – 2006 in accordance with the Regional Agreement relating to the planning of the digital terrestrial broadcasting in the 174-230 MHz and 470-862 MHz frequency bands (Geneva – 2006).

In accordance with the procedures pursuant to Art. 12 of the Radio Regulation of the ITU, 98 (56 for Season A and 42 for Season B) radio frequency assignments for terrestrial analogue and digital broadcasting of radio signals within the HF bands were coordinated.

Radio frequency assignments for satellite networks from the biweekly circulars BRIFIC 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 ITU and the relevant 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, the 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 :

Written objections

- in coordination of non-planned satellite systems and existing Bulgarian terrestrial networks, pursuant to Art. 21 of the Radio Regulation – 23 objections for 34 satellite systems;
- in coordination of satellite networks from the fixed-satellite radio service emitting in Space to Earth direction and possible interference to the feeder link of a satellite from the broadcasting-satellite radio service, pursuant to Art. 7 of Appendix 30A of the Radio Regulation – 15 objections for 27 satellite systems;
- coordination of satellite network on planned position from the broadcasting-satellite radio service and non-planned satellite network, pursuant to Art. 7 of Appendix 30 of the Radio Regulation – 8 objections for 12 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, according to Appendix 30B of the Radio Regulation – 4 objections for 4 satellite systems;
- request for inclusion into coordination when exceeding the noise temperature from non-planned satellite system to satellite system operating in the frequency band 21.4-22 GHz, pursuant to Art. 9.52 of the Radio Regulation – 1 objection for 1 satellite system.

Objections submitted via specialised ITU applications

- coordination of non-planned satellite station, potentially affecting another non-planned satellite station, pursuant to Art. 9.7 and Art. 9.41 of the Radio Regulation – objections were made for 130 satellite systems, as notices were sent to the relevant administrations;
- 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 3 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 19 satellite systems;
- coordination of emitting satellite station and receiving station from fixed radio service included in the table of frequency assignments, pursuant to Art.9.14 of the Radio Regulation – objections were made for 13 satellite systems;
- request for exclusion of the territory of the Republic of Bulgaria from the zone of service of a particular satellite system, pursuant to the provision of Art. 23.13/B and Art. 23.13/C of the Radio Regulation – for 1 satellite system, after coordination of the CRC's activities with MTITC.

The protection of the orbital resources of the Republic of Bulgaria for fixed-satellite and broadcasting-satellite radio service 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. In addition – coordination allows the smooth operation of radio services in bands on co-primary basis.

Electromagnetic compatibility

During the year, electromagnetic compatibility analysis of 68 Bulgarian and 62 foreign VHF radio broadcasting stations with the aeronautical systems ILS, VOR and COM were carried out.

Due to the identified possible interference while carrying out the analysis for electromagnetic compatibility with the aeronautical radio services 21 radio frequency assignments were submitted for measurements 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 the past year no new authorisations for use of individually assigned scarce resource – numbers were issued. Three undertakings (Premium Net International S.R.L., Global Communications AD and Tritel OOD) have requested the termination of their issued authorizations for use of the numbering resources, and Blizoo media & Broad band EAD authorization was transferred to Mobiltel EAD due to the merger of the two undertakings.

At the end of 2017 the total number of undertakings, to which authorisations for use of individually assigned scarce resource – numbers, for carrying out public electronic communications have been issued, was 26.

In 2017 the undertakings were assigned:

- 1900 geographic numbers;
- 200 numbers after access code “700” – for the Personal Number service;
- 3 international signalling point codes.

Due to optimisation of its network, BTC has released 250 000 geographic numbers and 24100 numbers for value-added services (range „90”). Due to optimisation of networks and services of the alternative undertakings or termination of their activities in 2017 were released as follows:

- 73900 geographic numbers;
- 1000 numbers after access code “90” - for value-added services;
- 100 numbers after access code “700” – for the Personal Number service;
- 2 national signalling point codes (NSPC);
- 2 international signalling point codes (ISPC);
- 1 access code for the “carrier selection”.

The allocation of geographic numbers assigned to the undertakings at the end of 2017 is presented on the Fig. 38 below:

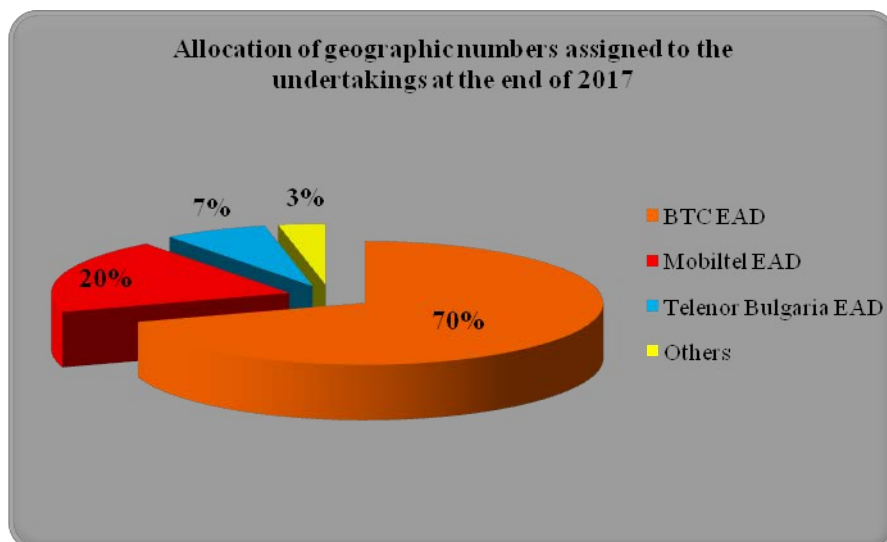


Fig. 38

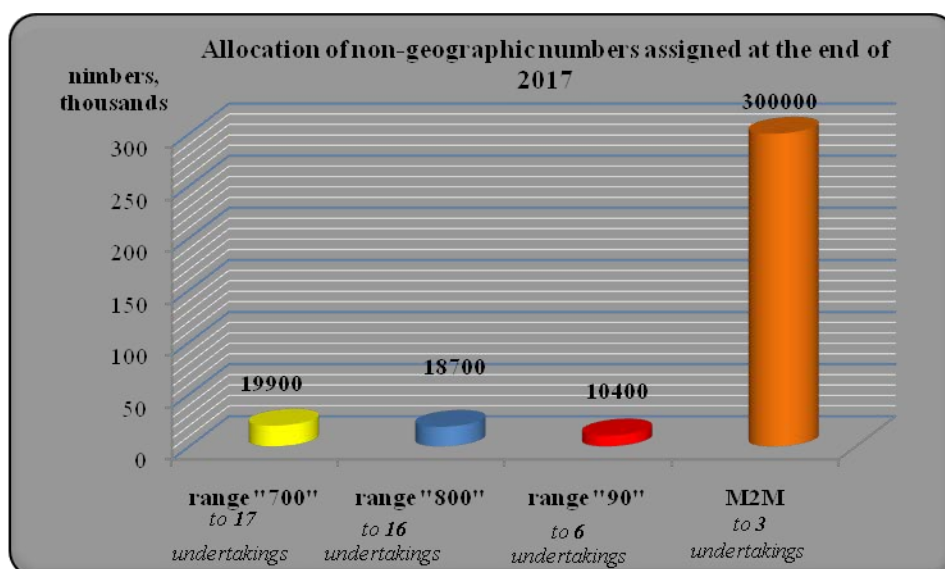


Fig. 39

In recent years, a steady downward trend in the numbers of geographic numbers allocated to the undertakings was observed. It was a result of end-users' decreased interest to the Fixed telephony service.

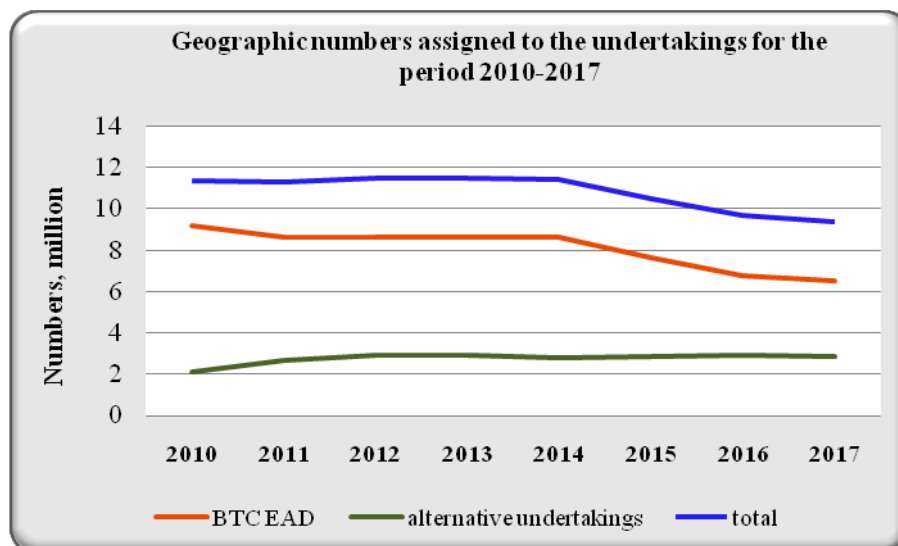


Fig.40

The numbering resource, range „430” – for access to services using Machine-to-Machine (M2M) communication has been assigned to three undertakings – Mobiltel, BTC and Telenor Bulgaria. Data for the numbers provided to the end users as of 31.12.2016 and as of 31.12.2017 are presented in the Fig.41 below:

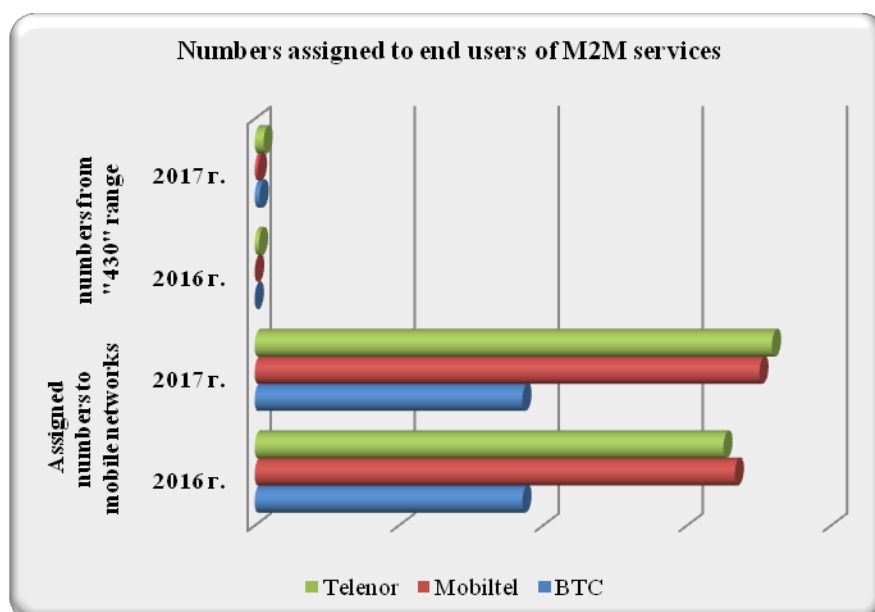


Fig.41

In 2017 a slight increasing of the provided to end-users numbers of “430” range was reported. More numbers for M2M services of ranges for access to mobile networks continued to be provided.

- **Number portability**

The trend, the number of the ported numbers to mobile networks to be higher than the number of ported numbers to fixed networks, continued in 2017.

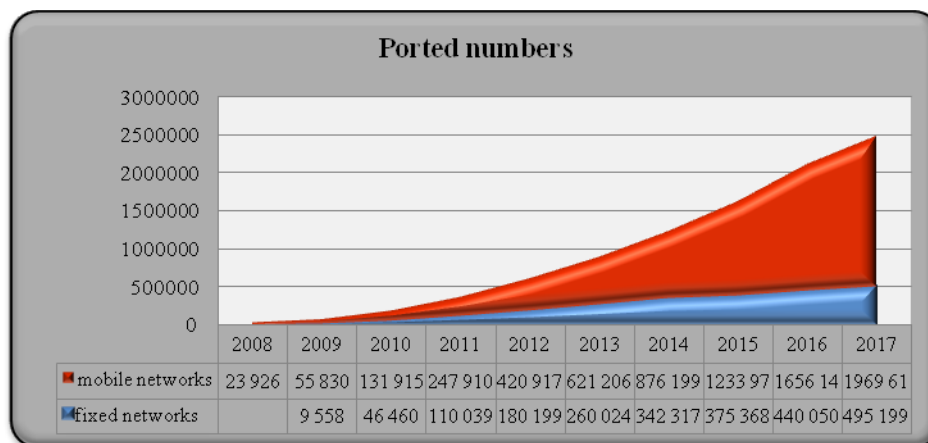


Fig.42

The total number of the ported numbers to the mobile networks for the period 2009 – 2017 was 1 969 617. In 2017 for the first time compared to the previous year, a drop in the ported numbers to the mobile networks was observed. The share of the users who have benefited from their right to portability was 17.27% of the total number of mobile services users.

The total number of the ported numbers to the fixed networks for the period 2009 – 2017 was 495 199. In 2017 the number of the ported numbers decreased compared to the previous year. 18.83% of the total number of end users of Fixed telephony service benefited from their right to portability .

Regarding non-geographic numbers, no high growth of ported numbers was reported – in 2017,115 numbers in total were ported.

12. Regulation and monitoring of the electronic communications services market

The analysis of the competitive environment on the markets of electronic communication networks and/or services and the regulatory measures adopted in order to ensure a competitive environment, are among the main working priorities of the CRC. The activities related to the implementation of these objectives are:

Monitoring of the electronic communications markets

In accordance with Art.40 of the LEC, as well as Art.15 of the Methodology for the terms and procedures of relevant market definition, analysis and assessment ⁷⁸ (the Methodology), CRC regularly collects information by the undertakings, providing electronic communications services, through observation of a set of parameters for which data is collected means of special-purpose questionnaires. In 2017 in accordance with its priorities and in order to automate the activities related to the regular information collection and processing, CRC conducted market consultations under Art. 44 of the Public Procurement Act. Documentation was prepared for conducting a public procurement in connection with the development and introduction of CRC's internal information system for on-line filling and receipt of questionnaires. In compliance with LEC requirements the State e-Government Agency launched the procedure for assessment of the prepared terms of reference for public procurement which ended with a favourable opinion at the end of 2017. The procedure for the selection of the contractor has been under way since the beginning of 2018. After its completion conditions for the automated processing of the information will be found, necessary to the Commission for:

- definition, analysis and assessment of the relevant electronic communications market according to the 2009 European Regulatory Framework and the package of regulatory documents containing the main recommendations of the European Commission concerning the application of

⁷⁸ http://www.crc.bg/files/_bg/Metodika_2012_DV.pdf (adopted by CRC Decision No.2076 of 23.10.2012 and prom. In SG, No.89 of 13 November 2012)

a harmonised regulatory approach by the national regulatory authorities of the Member States;

- preparation of a summarised annual analysis on the state and development of the electronic communications market in Bulgaria for the previous year, a 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 organisations of which CRC is a member by virtue of international agreements: International Telecommunication Union (ITU), Body of European regulators for Electronic Communications (BEREC), Independent Regulators Group (IRG) etc.;
- implementing control over the fulfilment of imposed specific obligations.

Definition, analysis and assessment of relevant electronic communications markets according to the 2009 European Regulatory Framework, as well as imposing specific obligations in the case of undertakings having significant market power on the relevant markets

Having in mind the term for review of analysis of relevant markets, regulated by LEC, in 2017 no analysis of relevant markets was prepared.

Collection of information and follow-up the fulfilment of the obligations, arising from the regulation for international roaming

Regulation (EU) No. 531/2012⁷⁹ on roaming on public communications networks within the Union (Roaming Regulation) adopted:

- extension of the obligation to maintain maximum wholesale charges (price caps) for voice calls, short text messages (SMS) and data transfer (mobile Internet);
- introduction of “roam –like-at-home” (RLAH) since 15 June 2017;
- extension of the obligations for transparency, avoidance of inadvertent roaming and “bill shocks”;

At the end of 2016, Commission Implementing Regulation (EU) 2016/2286⁸⁰ (Implementing regulation), was adopted, which was directly connected with the abolition of retail roaming surcharges within the EU Member States as from 15 June 2017. In this respect, at the beginning of 2017 CRC conducted consultations with the undertakings to determine the problems in the practical application of the provisions of the Implementing Regulation. The problems identified by CRC experts and Bulgarian roaming providers were taken into account when preparing the guidelines⁸¹ for the Implementation of the Roaming Regulation by BEREC.

In order to prevent the abusive or anomalous use of roaming services, the undertakings introduced Fair Use Policy (FUP). CRC carried out detailed analyses and established some insignificant inaccuracies and omissions at development of conditions for RLAH and FUP, as well as when publishing at the roaming providers' websites. As a result of questions and instructions sent by CRC, the initially identified inaccuracies and omissions were removed by Bulgarian mobile undertakings.

⁷⁹ Regulation (EU) No.531/2012 of the European Parliament and of the Council of 13 June 2012 on roaming on public communications networks within the Union, amended by Regulation 2015/ 2120 of 25 November 2015 and regulation (EU) 2017/920 of 17 May 2017.

⁸⁰ Commission Implementing Regulation (EU) 2016/2286 of 15 December 2016 laying down detailed rules on the application of fair use policy and on the methodology for assessing the sustainability of the abolition of retail roaming surcharges and on application to be submitted by a roaming provider for the purposes of that assessment

⁸¹ Guidelines for retail roaming - BoR (17) 56, http://crc.bg/files/_bg/7005-berec-guidelines-on-regulation-eu-no-531_0_N_10825-29_06_BG_TC_03_08_2017.pdf

A methodology for assessing the sustainability of RLAH offering was included in the Implementing Regulation. On the basis of roaming provider application together with relevant estimates and prognoses, the regulator might take a decision for derogation and to determine surcharges for using roaming services in order to compensate the undertaking's losses when providing roaming. By the end of 2017 there were no applications for derogation submitted to CRC.

In 2017 CRC continued to exercise control on the implementation of the Roaming Regulation requirements with regard to implementation of RLAH (of 15.06.2017) and the fair use policy introduced by the undertakings, as:

- carried out inspections on the correctness of the surcharges applied by the undertakings and the compliance of the included data volumes with the Implementing Regulation requirements;
- carried out permanent monitoring of the undertakings' offers and their communications with the users through all communication channels, collecting and summarizing the data on transparency and comparability of their retail roaming services;
- published information for the users on the CRC website in order to get them acquainted with the operative regulations.

With a view to the above, it has been established those undertakings providing public electronic communications services through mobile networks:

- ✓ apply the Implementing Regulation when presenting the new charges applying RLAH and FUP to postpaid and prepaid roaming plans;
- ✓ implement the provisions for transparency, avoidance of inadvertent roaming and “bill shocks” in accordance with the Regulation requirements;
- ✓ apply charges in accordance with the price caps for regulated wholesale and retail roaming services.

13. Development and technical support of the National Radio Frequency Spectrum Monitoring System

In 2017, in two stages, the dedicated software for radio monitoring, used in fixed and mobile stations for radio monitoring by National Radio Frequency Spectrum Monitoring System (NMS) was updated. As a result, all stations for radio monitoring operated with updated version of the dedicated software which expanded the functional capabilities of the stations and hence, the efficiency of the radio frequency spectrum monitoring.

The study of possibilities for NMS expanding and updating as well as carrying out activities on technical and preventive maintenance of the used facilities, continued.

In 2017, regarding technical and technological support of the activities for electronic communication networks control and monitoring, activities on technical support of dedicated technological equipment: fixed, mobile and transportable monitoring stations, portable measurement equipment and NMS communication networks (configuration, set up and administration) were fulfilled.

For the implementation of its control functions, at the end of 2017 CRC operated with the following measurement systems:

- 15 fixed stations for radio frequency spectrum (RFS) monitoring (1 manned and 14 unmanned Remote Measurement Stations (RMS) in the bands of 20 to 3000 MHz;
- 8 mobile stations for RFS monitoring;
- dedicated mobile station for GSM 900/1800 and DVB-T;
- transportable system for measurement of the coverage and quality of the services provided by GSM/UMTS networks;

- 2 transportable systems for measurement of the coverage and quality of the services provided by GSM/UMTS networks;
- 7 transportable systems for measurement of the coverage and quality of the DVB-T nets;
- 7 transportable measurement systems in the bands from 1,0 to 26,5 GHz;
- 7 portable measurement systems in the bands from 9 kHz to 20 GHz;
- 7 transportable measurement systems in the bands from 9 kHz to 3GHz.
- 5 digital cable television systems meters.

14. International activity of CRC in 2017

In 2017 CRC continued to carry out intensive international activity by expanding and deepening its presence in the activities of specialized international and European organisations and thus contributed to the development and better functioning of the internal market for electronic communications networks and services.

Participation in the work of European structures

In 2017 the Commission continued its active participation in the work of IRG and BEREC at the Heads of NRAs level as well as at the expert level.

CRC was presented at the highest level in the four regular General Assemblies of IRG and Plenary meetings of BoR of BEREC and MC of BEREC Office, held during the year respectively in February in Paris, France, in June in Cascais, Portugal, in October in Bucharest, Romania and in December in Copenhagen, Denmark. Just before the second BEREC Plenary meeting, a Summit was held between BEREC and EaPeReg⁸², REGULATEL⁸³ and EMERG⁸⁴ representatives under the slogan “Connecting Regions – Ensuring Connectivity in a Convergent World”, and before the third meeting – a conference on the occasion of the 15th anniversary of the establishment of the independent Romanian regulator ANCOM⁸⁵ under the slogan “Regulation 360° – from Word to Terabyte in 15 years”.

At expert level CRC participated in the four BEREC Contact Network meetings – in February in Malmö, Sweden, in May in Reykjavic, Iceland, in September in Beograd, Serbia, and in November in Malta.

Experts from the specialized administration participated in the meetings of BEREC Expert Working Groups (EWG) for 2017 - “Roaming/Mobile services”, “Network Neutrality“, “Next Generation Networks“and “Benchmarking“.

With CRC’s participation in the work of the BEREC expert working groups, in the discussions held during the Contact Network’s meeting, as well as in the BEREC Plenary meetings, 30 documents in implementation of the BEREC Work Programme for 2017 were adopted. A large number of them aimed to ensure harmonised implementation of the European regulatory framework for electronic communications in areas such as international roaming within EEA, exercising regulatory functions of the NRAs related to the implementation of the requirements for providing end users with open Internet access in compliance with Regulation (EU) 2015/2120, practices for the implementation of symmetrical regulation measures, etc. In the

⁸² The Group of regulators of Eastern Partnership Electronic Communications Regulators Network

⁸³ Latin American Forum of Telecommunications Regulators (Foro Latinoamericano de Entes Reguladores de Telecomunicaciones)

⁸⁴ Euro-Mediterranean Regulators Group

⁸⁵ National Authority for Management and Regulation in Communications

context of this review of the regulatory framework, with the active participation of CRC's experts, in 2017 BEREC prepared more than 15 motivated high-level opinions on different aspects of the EC' proposal to establish a new Electronic Communications Code (Code) and new BEREC Regulation.

In 2017 in Brussels the BEREC's training for the period 2016-2017 on the Regulatory framework for electronic communications continued, in which a CRC's representative took part, as the second, third and fourth sessions were held in February, March and April respectively. In November the first module from the third BEREC's training for the period 2017-2018 started again with the participation of a representative of CRC.

In 2017 CRC successfully served as ERGP Vice-Chair. CRC participated in the two ERGP Plenary meetings, the three meetings of the Steering Group and the two Contact Network meetings. A CRC's expert was trained on the issues of the annual postal statistics of the Directorate-General for Internal Market and Services to the EC in Valencia, Spain. CRC actively participated in the implementation of ERGP Work Programme for 2017 as well as in the organization and operation of the ERGP sub-working groups in compliance with the ERGP Rules of Procedure. With the active CRC's participation in its duties as ERGP Vice-Chair, a "Roadmap on the measures to improve ERGP efficiency" was adopted. Based on the experience accumulated in 2015 and 2016, CRC contributed to ERGP in preparation of the draft Work Programme for 2018, which was submitted to public consultation in September 2017. In 2017 CRC supported administratively the ERGP Secretariat in preparing the documents for the Steering Group and the Contact Network meetings, as well as for the Plenary meetings.

Communication with the European Commission (EC)

In November 2017 the regular annual mission of representatives of the EC Directorate-General for Communications Networks, Content & Technology, related to the preparation of the regular report for the progress in development of the electronic communications market in the Republic of Bulgaria in 2017 was held.

Participation in the activity of specialised international organisations

In 2017 CRC intensified its attendance and active positions in forums organised by ITU, UPU, CEPT, ETSI, etc.

International Telecommunication Union (ITU)

The key event organised by ITU, in which CRC was represented at the highest level in accordance with its competences, was the annual Session of the ITU Council, which was held in the second half of May 2017 in Geneva, Switzerland. It examined the preparation of upcoming large-scale events of the Union, such as the World Telecommunication Development Conference in 2017 (WTDC-17), the ITU Plenipotentiary Conference in 2018 (PP-18) and the World Radio Communication Conference in 2019 (WRC-19).

In 2017 CRC took part at high level in the ITU Regional Regulatory Conference for Europe "Next Generation Regulation", 25-26 September 2017 in Budva, Montenegro. It participated in the discussion of the strategic issues related to deployment of broadband networks in the Balkan region.

Universal Postal Union (UPU)

CRC participated in accordance with its competences in the two sessions of the UPU Council of Administration, which were held in April and May 2017 in Bern, Switzerland. This participation provided an opportunity for bilateral discussions and deepening CRC cooperation with regulators at regional, European and global level, as well as for the preparation of the upcoming extraordinary Congress of the Union in 2018.

Network of regulators of the Member States of the International Organisation of La Francophonie (FRATEL)

In its capacity of co-founder and full member of FRATEL since its establishment, CRC participated in the 15th annual meeting of the network, which took place in the period 23-24 November 2017 in Brussels, Belgium.

European Conference of Postal and Telecommunications Administrations (CEPT)

CRC's representatives participated in the activity of the working structures to CEPT:

- Meeting of the Committee for ITU Policy (Com-ITU) to CEPT, 18-20 January 2017 in Copenhagen, Denmark, 23-26 April 2017 in Vilnius, Lithuania, 04-06 July 2017 in Sofia, Bulgaria, 13-15 December 2017 in Copenhagen, Denmark.

The main task of Com-ITU activity in 2017 was the preparation of a single European position for the participation of the administrations – members of CEPT in the World Telecommunication Development Conference (WTDC-17), which was held in October 2017 in Buenos Aires, Argentina.

The preparation for the upcoming in 2018 ITU Plenipotentiary Conference (PP-18) started;

- Meeting of the ECC's Working Group Frequency Management – CEPT/ECC/WGFM, 30.01.-03.02.2017, Luxemburg;

- Plenary meeting of the European Committee for Postal Regulation (CERP), 01-02 June 2017, Madrid, Spain;

- Meetings of the Project Team on monitoring (PT FM 22) to the ECC's Working Group Frequency Management - CEPT/ECC/WG FM/PT FM 22, 04-07 April 2017, Copenhagen, Denmark, and 19-22 September 2017, Jūrmala, Latvia;

- Meeting of the ECC's Working Group Numbering and Networks - CEPT/ECC/WG NaN, 30.05.-01.06.2017, Helsinki, Finland, and 21-23 November 2017, Bucharest, Romania;

- Meeting of the Project Team Technical Regulation & Interconnection Standards - (PT TRIS) of the Working Group Numbering and Networks (WG NaN) to CEPT/ECC, 27-28 September 2017, Copenhagen, Denmark.

European Telecommunications Standards Institute (ETSI)

A CRC's representative participated in an ETSI seminar which was held in June 2017 in Sophia-Antipolis, France. The participation in this seminar gave the opportunity to be aware of important aspects of ETSI activities, of all procedures in the process of drafting of the European standards, as well as of the role of the national standardization organizations in their work together with ETSI.

Bilateral and regional cooperation and other significant international events

In 2017 CRC continued the tradition of developing and deepening the bilateral cooperation both on the basis of bilateral agreements with our neighbouring countries and by participation in large-scale events on a regional basis. CRC's experts participated in the annual International Regulatory Conference of the Macedonian regulator AEC which was held on 24-26 May 2017 in Ohrid, Macedonia.

CRC's representatives at high and expert level participated in the fifth, sixth, seventh and eight meetings of the South Digital Dividend Implementation Forum (*SEDDIF*), which were held in March in Athens, Greece, in June in Petrovac, Montenegro, and in October and in December in Budapest, Hungary, respectively.

The active CRC's international activity in 2017 both at high and expert level, contributed to improving the effectiveness of the Commission's work with the implementation of the best regulatory practices, taking into account trends and ongoing development processes on the international market as well as on the single European internal market, in order to protect the national interests with a view to the peculiarities of the Bulgarian electronic communications market.

15. CRC's Administrative capacity

Strengthen the administrative capacity of the Communication Regulation Commission is one of Commission's priority in order to provide professionally trained staff for the implementation the functions of the regulatory authority. The attraction, retention and improvement of employees with key competencies and responsibilities are necessary for achievement of the assigned tasks and implementation of the CRC activities.

In 2017 CRC performed its functions with the following distribution of the employees: (Fig. 43)

• Internal Audit Unit	1
• Positions directly subordinated to the CRC Chairman	2
• Coordination, Planning and International Relations Directorate	10
• Legal Regulation and General Legal Services Directorate	21
• General Directorate Communications Control	63
• Authorization and Frequency Planning Directorate	29
• Technical Regulation and Electronic Signature Directorate	11
• Market Regulation Directorate	22
• Financial and Administrative Services Directorate	34

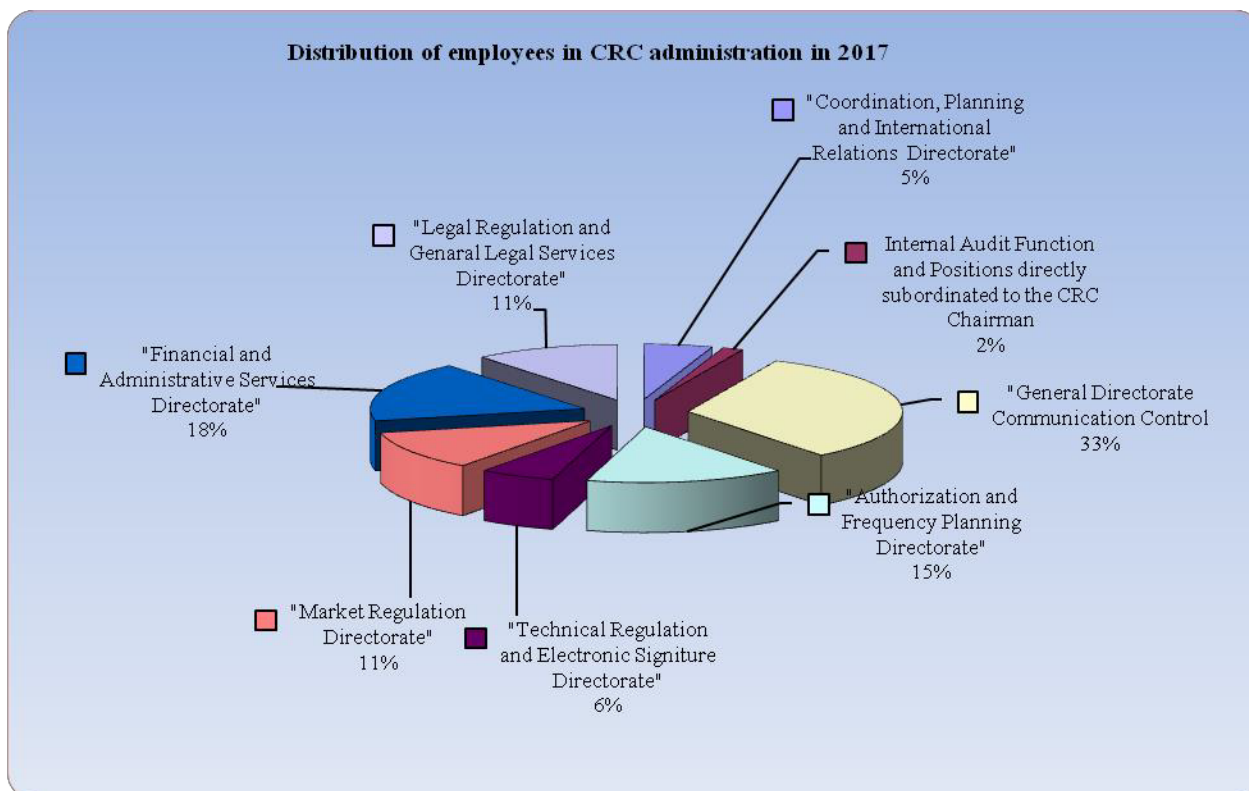


Fig. 43

The total number of the CRC staff is 255 positions. As of 31 December 2017, the employed were 198 and 57 vacant positions. The employed civil servants were 180, 178, 15 were under employment contract and 5 people were the collegial body members.

The predominant part of the staff was in the age category of 30 to 59 years including. Of the total number of employees in the CRC 198 had 164 of them had master's degree (Fig. 44).

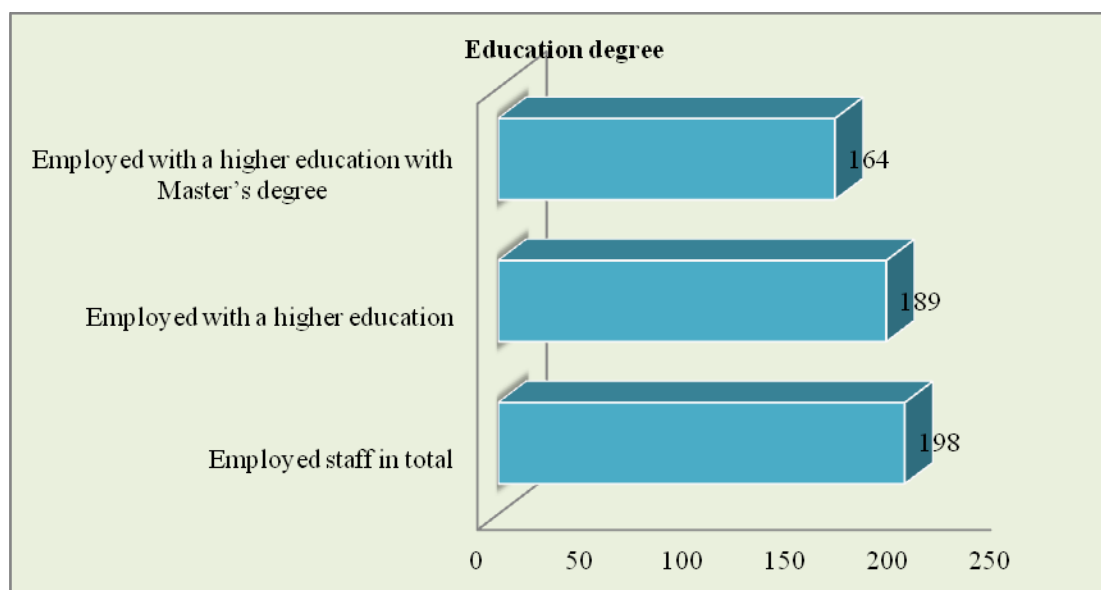


Fig. 44

The allocation of employees according to their education is in the following areas – technical sciences; legal sciences; economic sciences; humanitarian sciences and others (Fig.45).

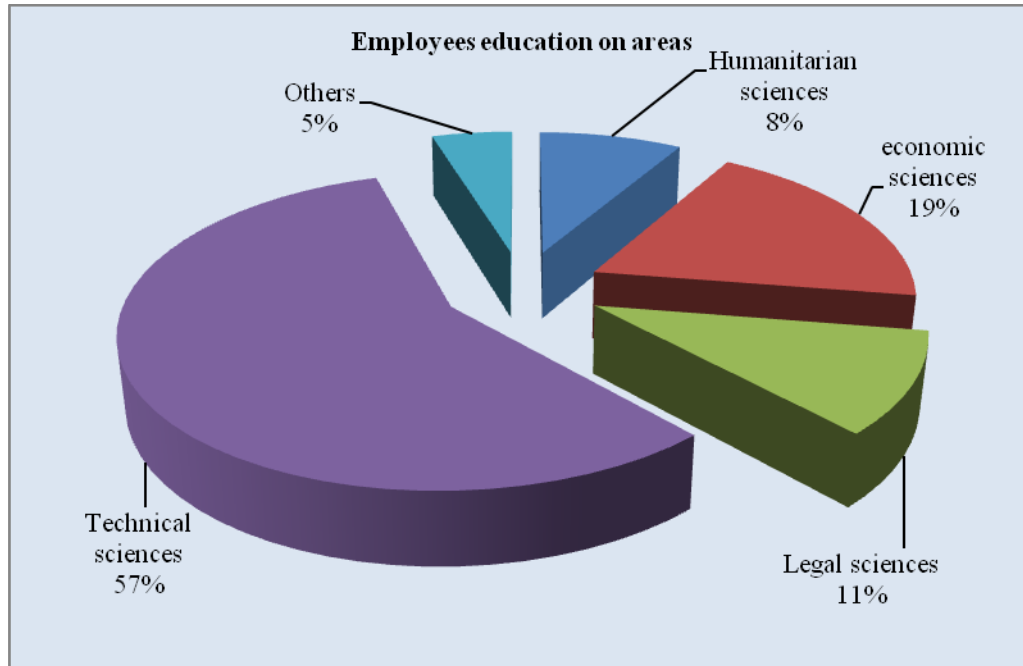


Fig.45

Recruiting of employees for the CRC's administration is according to the Law on Civil Servants, the Ordinance on Recruitment Procedures for Civil Servants and the Internal Rules.

In 2017 according to the regulatory requirements, at the CRC were organised and conducted 17 competition procedures, and as a result, 10 new employees were appointed until the end of the year. Employees leaving the CRC for the same period were 11.

In order to better planning and selection of human resources, Methodology for identification of key positions and Methodology for continuity, interoperability and career development in the administration of the CRC were developed and adopted. In 2017 a training of the employees assigned to be deputies of the employees in key positions in CRC on "Team effectiveness. Team management", in order to acquire managerial.

In relation with participation in a project of the Institute for Public Administration "Working for people – strengthening institutional capacity to meet the challenges of the modern public policies" under the Operational Programme "Good governance", from a total of 136 announced trainings, in 2017, 90 employees were trained. The rest employees have will be trained in 2018.

In order to maintain up-to-date knowledge and acquire new knowledge, except with the project above, the employees of CRC participated in trainings conducted by external specialized organisations.

The total number of courses and workshops, as well as the number of participants involved are as follows (Fig.46):

- Team effectiveness - 29
- Communication skills - 2
- Personal effectiveness. Emotional intelligence - 14
- Audit of the implementation of the administration activity - 2
- Internal control - 3
- Impact assessment - 9
- Practical problems of administrative offences and sanctions (for non-lawyers) - 9

- Practical problems of administrative offences and sanctions (for lawyers) - 2
- Public Procurement Act application - 13
- Document management in the state administration - 7
- Electrical safety training - 56
- Training on personal protective equipment against falls from a height - 9
- OHS training - 2
- R&S Spectrum Monitoring Software Argus 6.1 - 20
- Specialized seminars - 150

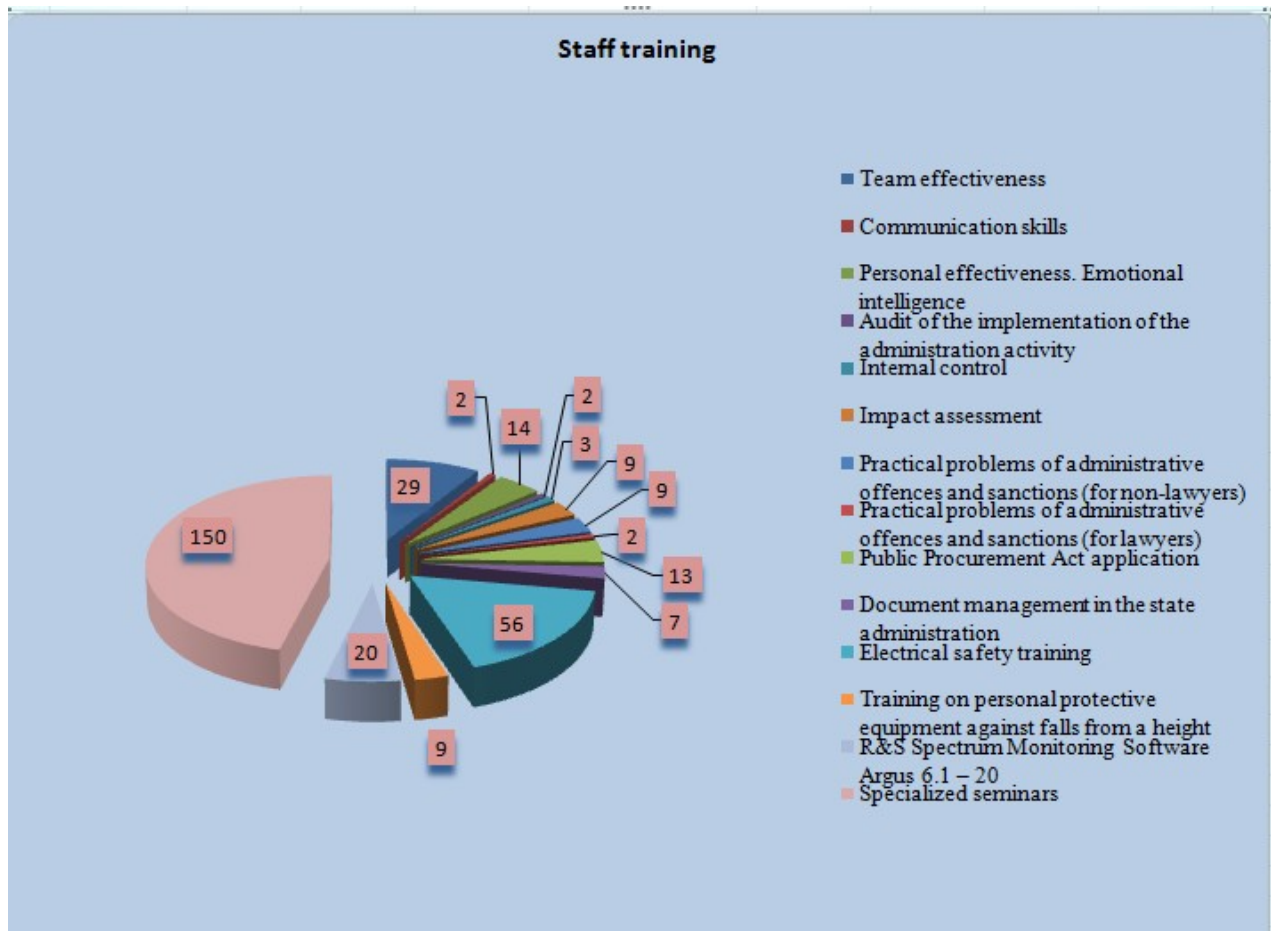


Fig.46

The effect of the trainings and benefit for the CRC are evaluated periodically in the process of the work in order to improve their effectiveness and efficiency.

2. Other important activities

2.1 Standardization

CRC performs the functions of the National Standardisation Organisation (NSO) for the European Telecommunications Standards Institute (ETSI) in compliance with Art. 30, point 22 of LEC. The Commission takes an active part in the work of the Technical Committees (TC) for Standardisation (TC 47, TC 57, TC 75, TC 80) of the Bulgarian Institute for Standardization (BDS), having relation to electronic communications.

In 2017 CRC participated in the ETSI procedures as follows:

Table 11

2017	Number of processed documents	Number of procedures
Vote (TAP) – Voting (two-step procedure)	41	26
ENAP – One-step procedure	93	36
MV – Member voting	67	16
Withdrawal	11	4
PUB – All weekly received documents	2660	

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

In the past year 107 ETSI EN standards and 1 ETSI standardization document were introduced by endorsement as Bulgarian standards, 21 standards were withdrawn.

The translation of the titles of draft ETSI harmonised standards have been prepared and agreed on time by correspondence at TC of BDS.

By publishing draft standards and standardisation documents of ETSI on the different procedures on its website, CRC provides opportunity for all concerned parties to give their opinions and comments. In implementation of Regulation (EU) ⁸⁶ 2012/1025, the Commission provides ETSI with an annual report on standardisation activities.

2.2. Radio equipment and electronic communication terminal equipment

In the past 2017 CRC received, stored and reviewed in term 67 notifications for radio equipment which would be placed on the market. After analysing the received notifications CRC sent 18 letters by which the applicants were informed about the inability of radio equipment to be put into service on the territory of the Republic of Bulgaria or the ability of particular radio equipment to be put into service observing the conditions and the relevant technical parameters specified in the Bulgarian regulations.

The following chart shows for comparison by years, the number of received notifications and the number of letters sent by CRC for the period from the beginning of 2008 to closure of the European OSN (One Stop Notification) portal, on June 13, 2017.

⁸⁶ Regulation (EU) 1025/2012 of the European Parliament and of the Council on European standardization, amending Council Directives 89/686/EEC and 93/15/EEC of the Council and Directives 94/9/EC, 94/25/EC, 95/16/EC, 97/23/EC, 98/34/EC, 2004/22/EC, 2007/23/EC, 2009/23/EC and 2009/105/EC of the European Parliament and of the Council and repealing Council Decision 87/95/EEC of the Council and Decision 1673/2006/EC of the European Parliament and of the Council

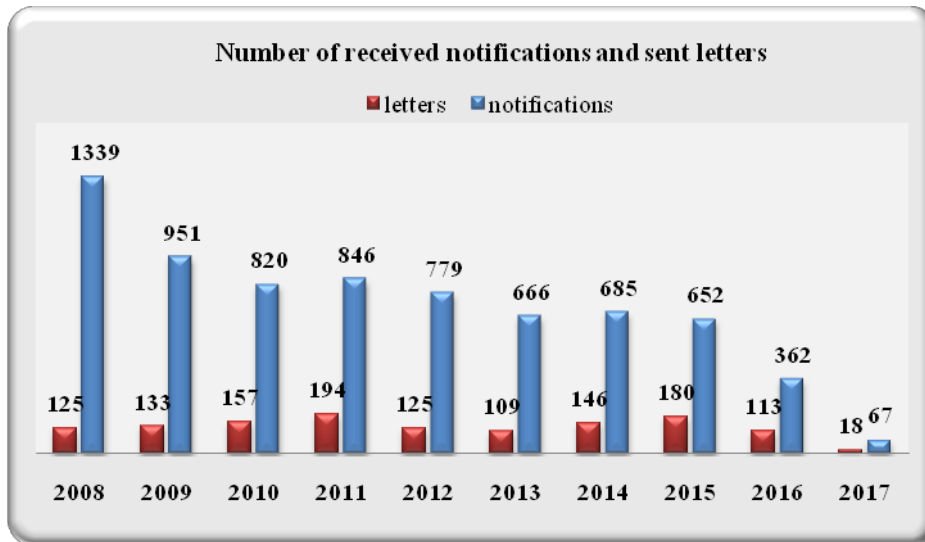


Fig.47

23. Performance of obligations related to Chapter 15 of the LEC

In 2017 CRC received three notifications about incidents that had had a significant impact on networks and services. The three incidents occurred in the mobile networks of two of undertakings providing mobile services. Mobile access to Internet service was affected in the two of the cases and Mobile access to Internet and mobile telephony service – in the third case. The incident with the longest duration affected about 500 000 users for less than five hours. In implementation of its obligations under Art.243b, Para.5 of the LEC, CRC prepared and sent an annual report to the European Commission and ENISA⁸⁷ on the basis of received notifications.

The incident causes occurred in 2017 were connected to failures of a different part in technical equipment and networks provision, while in 2015 and 2016 the incidents were caused by natural phenomena. The figures below present the information on the incident causes in Bulgaria with significant impact for the period 2015-2017 and the services affected.

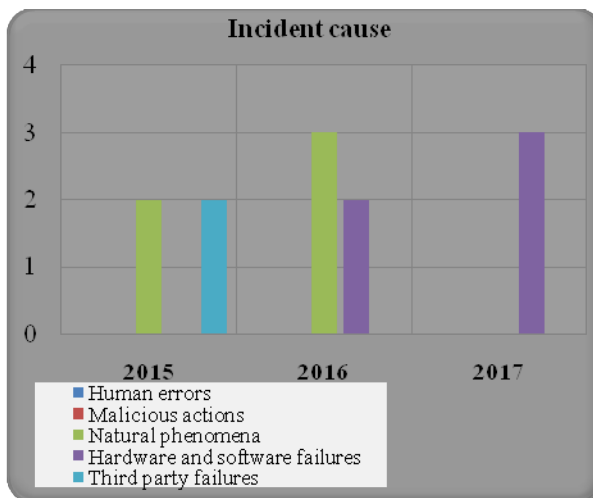


Fig. 48

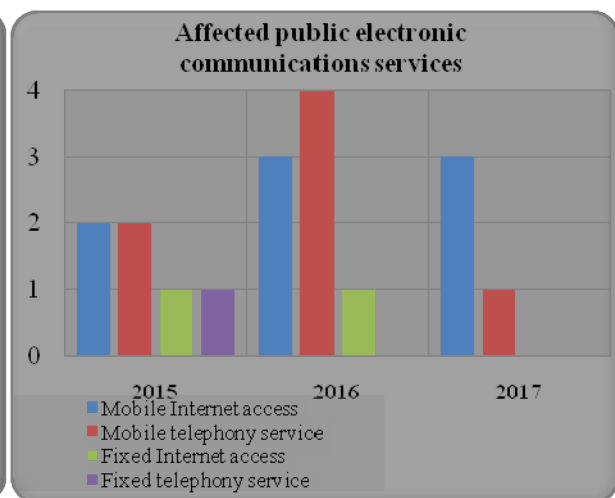


Fig. 49

According to ENISA annual reports, for the given period the mobile internet and mobile telephony services are predominantly affected when incidents with significant impact on the network functionality occurred both in Bulgaria and other Members-States.

⁸⁷ European Union Agency for Network and Information Security

24. Electronic signature

The rapid development of the information technologies and provision of reliable and secure trust services makes the exchange of electronic documents and electronic communications a preferred way of communications in different public spheres of life. The implementation of Regulation (EU) 910/2014⁸⁸ in the European Union aims to increase the trust in electronic transactions in the digital single market, by ensuring a common base for reliable electronic communication between the citizen, undertakings and public authorities. The Regulation gives the requirements for the qualified trust services providers and the services provided which ensure a high-security level of all qualified trust services provided.

In connection with the alignment of the national legislation with the requirements of Regulation (EU) 910/2014, in October 2017 a law on amendment and supplement of the Law for the electronic document and electronic signature (LEDES) was adopted. The name of the law became Electronic Document and Electronic Trust Services Act (EDETSA).

By the middle of 2017, the qualified trust service providers Borica AD (with ex name “Borica-Bankservise” AD), Information Service AD, Evrotrust Technologies JSC and InfoNotary EAD issuing qualified certificates for electronic signature, according to LEDES, have brought their activities in line with the requirements of Regulation (EU) 910/2014 and were assessed for conformity through audits by conformity assessment bodies. Conformity assessment reports were submitted to CRC. In compliance with the provisions of Art.17, point 4 of Regulation (EU) 910/2014, the Commission as a supervisory body checked and analysed the reports and confirmed the qualified status of the providers: Borica AD, Information Service AD and Evrotrust Technologies JSC and the trust services provided by them.

CRC as an authority responsible for the national trust list registered the new qualified trust services provided by the mentioned above providers.

SEP Bulgaria AD did not submit a conformity assessment report. The trust services provided by SEP Bulgaria AD according to the LEDES had been revoked since 2 July 2017.

In the past year, the total number of the issued qualified certificates for electronic signatures (for individuals and individuals associated with legal entities) was over 175 400. The issued qualified electronic time stamps which met the requirements of Regulation (EU) 910/2014 were about 4 910 000, while the qualified certificates for website authentication - 15. During the year qualified trust services providers continued their preparation on implementation of Regulation (EU) 910/2014, as the investments increased by 20% compared to the previous year.

25. Communications control

CRC exercises effective control regarding compliance with LEC and secondary legislation requirements in the area of electronic communications. CRC control functions throughout the country are performed by built territorial structure – a main unit in Sofia and five regional units in the towns of Plovdiv, Burgas, Varna, Velico Tarnovo, and Vratsa.

Recently, including in 2017 by its control activity CRC has devoted a main place to observe the LEC requirements regarding protection of the end users in compliance with principles of the law, non-discrimination and transparency.

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

⁸⁸ Regulation (EU) 910/2014 of the European Parliament and of the Council on electronic identification and trust services for electronic transactions in the internal market and repealing Directive 1999/93/EC

CRC performs its main activities of monitoring and control of RFS by the established NMS. Periodic preventive control was carried out through fixed and mobile stations for radio monitoring throughout 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 the end users.

The introduction of the new technologies and the continued improvement of electronic communications require the availability of sufficient free RFS, which is crucial for the competition development in the sector. In this respect, the significant role of monitoring and control in regarding effective RFS management and the need to provide up-to-date data for RFS availability strengthens more and more. The increasing number of users of services provided by using RFS also requires strengthening of the role of monitoring for the efficient management of the spectrum as a national scarce recourse.

The establishment of conditions for the normal operation of the constructed radio networks without any harmful interference is possible only by constant monitoring and control. On the other hand, the constant monitoring contributes to the timely localisation and elimination of sources of radio interference and identification of illegal broadcasting equipment.

In 2017 as well, particular attention was given to the monitoring of the VHF frequency ranges for radio and television broadcasting for the assessment of the electromagnetic environment and cross-border interferences.

In 2017 main RFS monitoring and control activities were as follows:

- **Protection of the interests of end users by establishing conditions** for normal work of legitimate spectrum users and ensuring a certain quality of the electronic communications services provided to the end users, as well as avoiding interfering and illegal broadcasting through exercising preventive and following control.

In 2017, as a result of the ongoing regular planned monitoring, the undertakings were sent electronically data from 13335 measurements made of basic technical parameters of radio broadcasting stations. The steady trend of maintaining the parameters of broadcast radio signals according to the standards and reducing the side and intermodulation emissions generated, including in the scope of the aeronautical service, continued. As a result of the preventive control of the radio frequency spectrum, 40% less prescriptions for deviations of technical parameters were given compared to 2016. At the subsequent inspections it was ascertained that the undertakings had taken the necessary measures for bringing the broadcasting stations in compliance within specified one-month period.

- 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 the 20-3000 MHz frequency band through fixed (manned and unmanned) stations for radio monitoring by NMS, and through mobile stations for radio monitoring – periodic control and monitoring throughout the country.

- Monitoring and control of the **conformity of the established broadcasting stations** for analogue terrestrial broadcasting of radio signals and digital terrestrial broadcasting of television signals with the approved technical characteristics. Measurements of basic technical parameters of 50 broadcasting stations were carried out in fulfilment of CRC's decisions to verify their compliance with the approved technical specifications. CRC found that all broadcasting stations had fulfilled CRC 'decisions and operated with approved technical characteristics.

- Monitoring for **evaluation of the electromagnetic environment:**

- Monitoring of VHF frequency ranges for radio and television broadcasting for evaluation of the electromagnetic environment and cross-border interferences.

In border country areas, annual measurements are conducted in order to assess penetration of signals from neighbouring countries and analysis of the radio-frequency protection ratio between the EMF intensity of broadcasting transmission stations (according to Rec. ITU-R BS. 412) - the measurements on the territory of 47 settlements to assess the electromagnetic environment and cross-border interferences from the territory of Turkey, Serbia, Romania, Ukraine, Russia, Macedonia and Greece were summarised and analysed. The results were objectified in 313 measurement reports.

Traditionally, special attention during the summer months was paid to the evaluation of the electromagnetic environment and cross-border interferences on the Bulgarian Black Sea coast. Regular measurements were conducted in 7 settlements on the Bulgarian Black Sea coast. As a result of actions undertaken during past years, no penetration along Bulgarian broadcasting stations has been registered in their areas of service and relatively lower levels of cross-border signals received from Turkish broadcasting stations were registered. Once again was ascertained that during the summer period the penetration of cross-border transmissions along the Black Sea coast is affected too much by ambient temperature, sea water temperature and sea condition.

Annual measurements on the territory of different settlements in the country are conducted to assess the electromagnetic environment and for the purpose of the spectrum management. In 2017 measurements were conducted on the territory of 16 settlements as the results were objectified in 289 measurement reports.

- monitoring of frequency ranges intended mobile PMR networks.

For evaluation the actual availability of RFS and registering illegal radio broadcasting in PMR network ranges on the territory of the country through fixed (manned and unmanned) radio monitoring stations of NMS, monitoring was conducting on the territory of: Sofia city (Sofia fixed station), Brystovets village (Remote Measurement Station – RMS Brystovets), Botevo village (RMS Botevo), Plovdiv city (RMS Plovdiv), Chernogorovo village (RMS Chernogorovo), Vidin town (RMS Vidin), Vratsa town (RMS Vratsa), Blagoevgrad town (RMS Blagoevgrad), Salvo village (RMS Stalevo), Todorovo village (RMS Pleven), Varna town (RMS Varna), Radingrad village (RMS Razgrad), Ledenik village (RMS Ledenik), Montana town, Botevgrad town, Dobrich town, Kardjali town, Kjustendil town, Silistra town, Smolian town, Targoviste town, Shumen town, Russe town, Sandanski town, Mezdra town, Burgas town, Popovo town and Lom town. The results of the measurements conducted were summarized in 229 measurement reports.

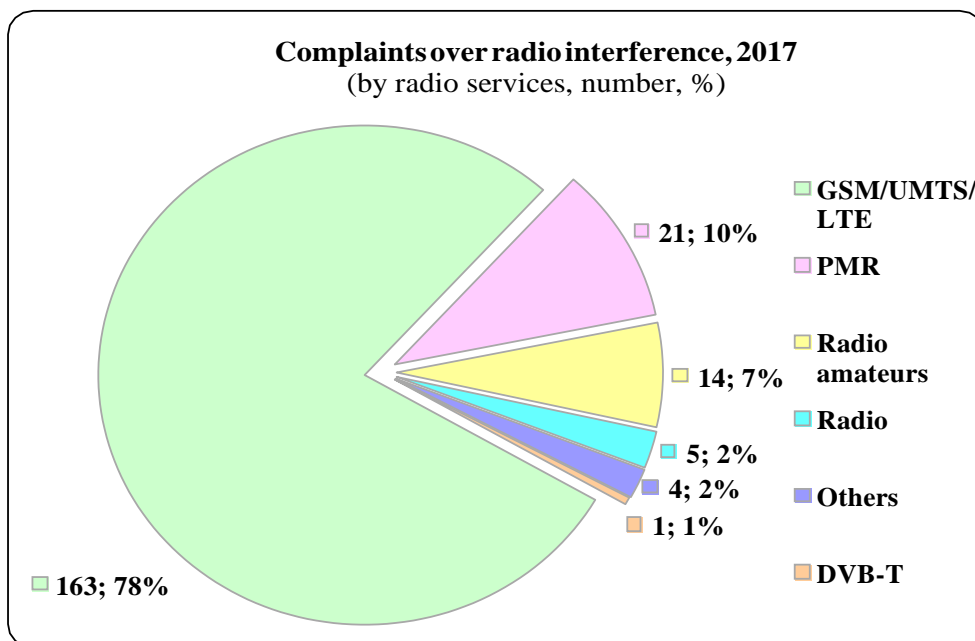
- evaluation of the electromagnetic compatibility of VHF-FM radio broadcasting stations in the 87.5-108.0 MHz bands and the radio navigation and communication equipment of the aeronautical services operating in the 109÷137 MHz frequency band.

In 2017 measurements were carried out of 13 radio broadcasting stations: RTVS Arbanasi and Yomi VHF center Veliko Turnovo town; RTVS Levent tabia, Russe town; TVRS Zlatograd, Zlatograd town; RTVS Yablanitsa, Yablanitsa town; RTVS Kopitoto, Sofia city; RTVS Papia, Tsarevo town; RTVS Pastrec, Kresna town; TVRS Strazhata, Velingrad town; RS Eelena, Elena town; RTVS Troian, Troian town; RTVS „Borovets, Borovets resort and RTVS Razgrad, Razgrad town in order to guarantee the electromagnetic compatibility and trouble-free operation of the radio navigation and communication equipment of the aeronautical services; the measurement were carried out according to the Methodology for measuring intermodulation products of type "A1", occurring during the operation of closely located VHF radio broadcasting stations (according to item 2.5 of Appendix 1 to the Technical requirements for operation of the electronic communication networks of the Radio broadcasting service and the relevant equipment).

- Monitoring and control over the quality of provided services with a view to the protection of public and consumer interest:

– monitoring related to received complaints from legitimate spectrum users, citizens, organisations and institutions.

In 2017, 208 cases of radio interference were examined, and 243 measurement reports were drawn up on the results. The majority part of the complaints (78 %) was from undertakings, providing services through mobile terrestrial networks - Fig. 50.



Source: CRC

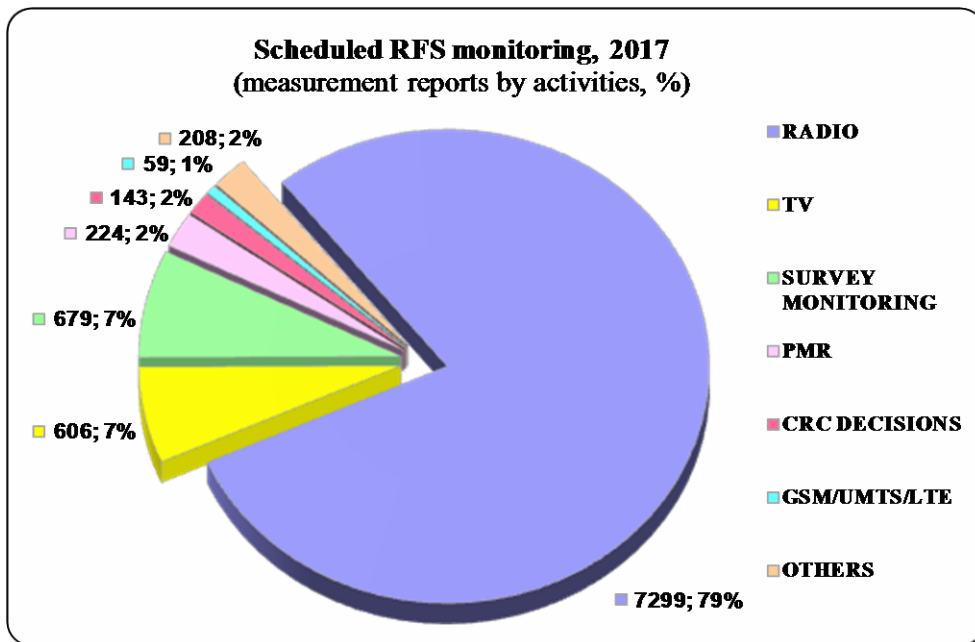
Fig. 50

The interferences from radio frequency jammers transmitting in frequency ranges intended for electronic communications through mobile terrestrial networks had a relatively high share. Next place was for cases of registered interferences from defective equipment in the frequency ranges intended for electronic communications through mobile terrestrial networks. In continued radio interferences 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 terrestrial radio networks.

- monitoring and inspections concerning **received complaints and signals related to the ensured coverage of the terrestrial digital television of DVB-T standard** – in 2017 CRC found significant decreasing of received complaints concerning DVB-T coverage; 5 complaints and signals from applicants as forwarded to CRC from other institutions (CEM, MTITC, etc.) under which measurements and inspections were carried out; 396 measurement reports with results from the performed planned measurements and inspections under complaints were drawn up.

- measurements and inspections concerning **received complaints and signals related to coverage of mobile terrestrial networks** – measurements were carried out in relation to received 58 complaints for the lack of coverage, 141 measurement reports were prepared; as well 638 statements were prepared regarding the coverage declared by the undertakings for settlements, subjects to the complaints received by the Commission; for the planned measurements of mobile networks coverage and quality according to standard GSM/UMTS/LTE 59 measurement reports were prepared.

The results from RFS monitoring and control carried out in 2017 were summarised in 9513 measurement reports, as for the performed planned monitoring 9128 measurement reports were drawn up whose analysis by types of activities is presented in Fig. 51.



Source: CRC

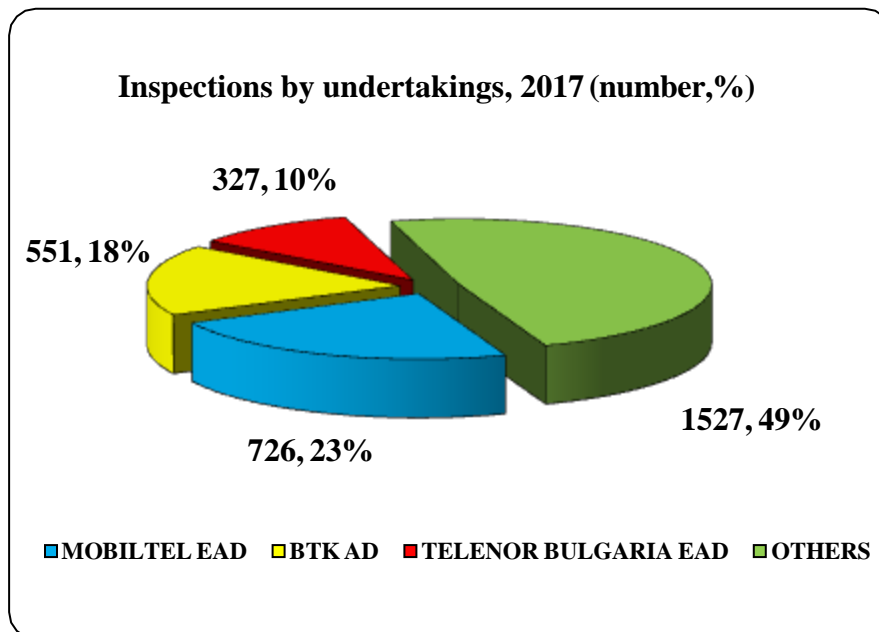
Fig. 51

2.5.2 Inspection activity

In connection with implementation of CRC control functions related to electronic communications provision according to the LEC, in 2017 the following main activities were fulfilled:

In 2017, 3131 inspections were carried out in relation to: implementation of CRC Decisions; compliance with the provisions of the authorisations issued; compliance with the requirements of Chapter Fourteen and Chapter Fifteen of the LEC; compliance with the General requirements for carrying out public electronic communications; problems with mobile roaming services; sending unsolicited messages for direct marketing and advertising by the undertakings without the prior consent of users; non-provision of itemized bills to end users; portability of geographic and mobile numbers; problems with the coverage and quality of provided service to end users; service provision without notification/authorization; non provision of information to CRC; inspections based on the risk analysis; inspections for radio interferences; inspections concerning coverage of mobile terrestrial networks and coverage of digital television networks.

In 2017 the main share of the inspections (1604 inspections or about 51 %) of the inspections were performed to the three major undertakings providing electronic communications services (Fig. 52 in relation to complaints received in CRC by end users concerning the services provided by them: MOBILTEL EAD – 726 inspections, BULGARIAN TELECOMMUNICATION COMPANY EAD – 551 inspections and TELENOR BULGARIA EAD – 327 inspections).



Source: CRC

Fig.52

In the following main inspection types were carried out for compliance with the requirements of the LEC concerning the **protection of end users' interests**:

- Inspections related to **the protection of end user's interests**:

- **problems when using mobile roaming services** – It was found that after entering in force of “roam-like-at-home” (RLAH) since 15 June 2017, the complaints received in CRC concerning problems with roaming services increased significantly. In 2017, inspections were carried out related to complaints concerning roaming service of MOBILTEL EAD – 166 (46 %) inspections, BULGARIAN TELECOMMUNICATION COMPANY EAD – 118 (33 %) inspections and TELENOR BULGARIA EAD – 75 (21 %) inspections. For ascertained violations, 32 acts of administrative offences (AEAOs) were drawn. In comparison to 2016 only 101 inspections were carried out and 3 (AEAOs) were drawn concerning problems with roaming services.

- compliance with the requirements of **Chapter Fifteen of the LEC** concerning the **protection of consumer data** – 435 inspections were carried out concerning:

- ♦ sending **unsolicited messages for direct marketing purpose** and advertising without the prior consent of the users unsolicited messages for direct marketing purpose and advertising without the prior consent of the users, as well as problems in with the use of value-added services – about the amounts charged when registering in games, quiz games, purchasing information and entertainment contents and other Information Society Services - 348 inspections were carried out;

- ♦ free-of-charge **provision of itemized bills** for services used – 87 inspections;

For ascertained violations of Chapter Fifteen of the LEC, in 2017, 21 acts of administrative offences (AEAOs) were drawn up.

- Compliance of requirements of **Chapter 14 of LEC** concerning **the contracts** with undertakings providing electronic communication services: requisites of the offered individual contracts, terms and conditions of the provided services, prices of the provided services, price packages or tariffs and condition for their use, general conditions of the individual contracts etc. - 191 inspections were carried out of: MOBILTEL EAD – 73 inspections, BULGARIAN TELECOMMUNICATION COMPANY EAD – 36 inspections, TELENOR BULGARIA EAD – 28 inspections and 54 inspections of other undertakings providing electronic communications

services; for ascertained violations of the Chapter 14 of 3EC in 2017, 23 (AEAOs) were drawn up;

- **Dispute of bills and accrued penalties** - in 2017, 136 inspections were carried out in total, of: MOBILTEL EAD – 90 inspections, BULGARIAN TELECOMMUNICATION COMPANY EAD – 32 inspections and TELENOR BULGARIA EAD – 14 inspections;

- Inspections concerning compliance with the **General requirements** for carrying out public electronic communications – 151 inspections were carried out, of which 105 inspections of BULGARIAN TELECOMMUNICATION COMPANY EAD, MOBILTEL EAD and TELENOR BULGARIA EAD and 46 inspections of other 15 undertakings providing electronic communications services. For ascertained violations of the General requirements, in 2017, 87 бр. acts of administrative offences (AEAOs) were drawn up;

- Inspections related to solving problems in the **number portability** implementation in case of changing the telephony service provider - in 2017, 111 inspections of complaints related to obstructing the users' right to portability of mobile and fixed numbers were carried out and 14 acts of administrative offences (AEAOs) were drawn up;

- Inspections on compliance with the **authorizations 'conditions and CRC decisions** - in 2017, 158 inspections were carried out on the conditions for the authorizations, implementation of CRC decisions, compliance with the specific obligations and inspections of electronic communications networks for analogue terrestrial broadcasting for compliance of the transmission stations with the technical characteristics approved by CRC. For ascertained violations, 12 AEAOs were drawn up.

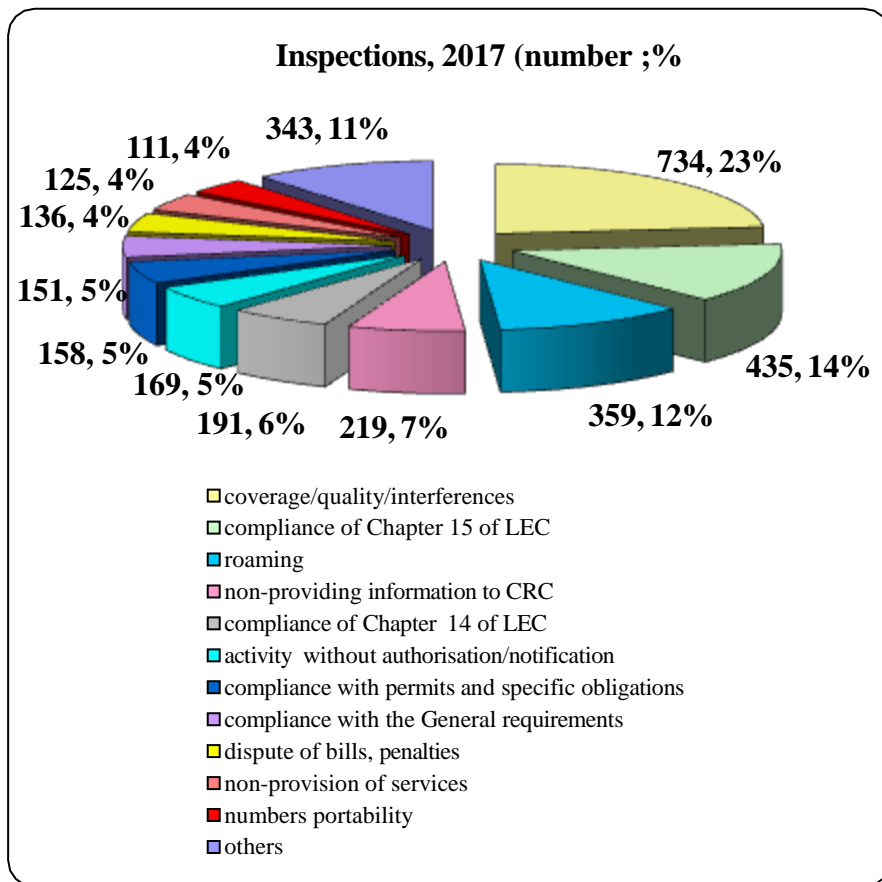
- Inspections of electronic communications networks from a **mobile radio service PMR** in connection with effective use of the provided scarce resource – radio frequency spectrum – 77 inspections were carried out of undertakings providing electronic communications for own needs through electronic communication networks from mobile radio service PMR; for ascertained violations 6 AEAOs were drawn up.

Inspections of **cable electronic communications networks** for transmission and/or distribution of radio and TV programmes, for data transfer without using scarce resource – 339 were carried out regarding compliance with the General requirements, provision of electronic communications services without notification and no provision of information to CRC; for ascertained violations 131 AEAOs were drawn up.

- Planned inspections and inspections on complaints on **coverage** and quality of the services provided from mobile terrestrial networks under GSM/UMTS/LTE standard and DVB-T networks, as well as inspections regarding complaints for **radio interferences** – 734 inspections were carried out in total.

In 2017, 560 of the carried out inspections (or about 18 %) were on **the basis of risk analysis** – inspections regarding provision of electronic communications by undertakings, submitted notification to CRC to terminate their activity, inspections regarding activity after revoked and terminated authorizations or expired authorizations, inspections on compliance with the General requirements, inspections of coverage and quality of DVB-T networks and mobile terrestrial networks, as well as inspections for compliance with § 15 of the Anti-terrorism Act. For ascertained violations when inspecting on the basis of risk analysis 25 AEAOs were drawn up.

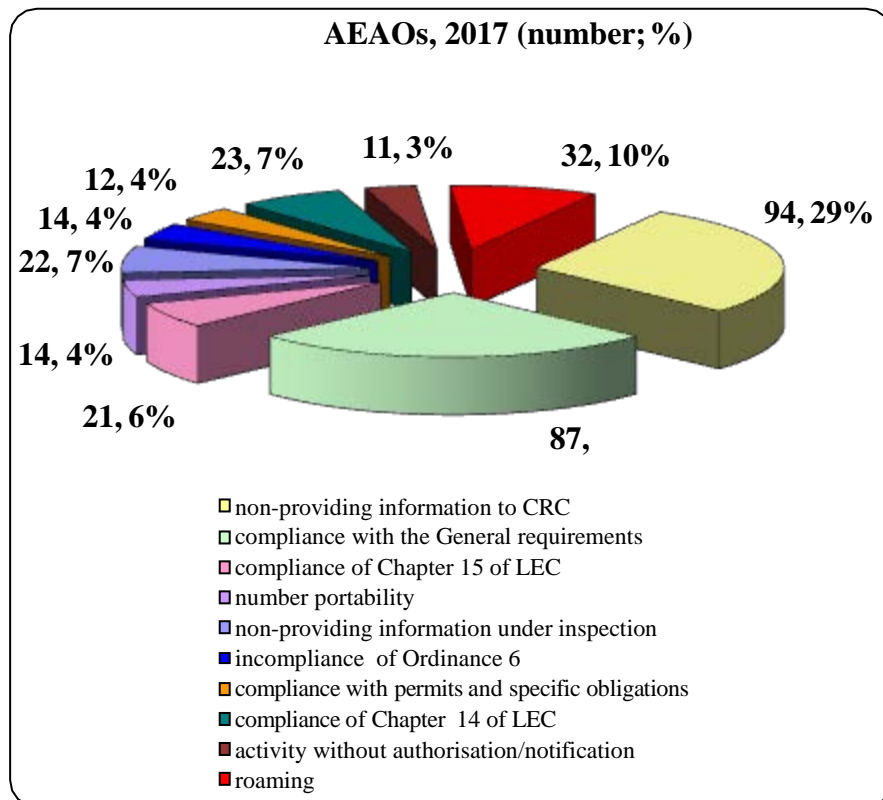
Summarized data on the control activity and engaged administrative liability when ascertaining violations of the LEC and Regulations in 2017 are presented in Fig. 53 and Fig. 54.



Source: CRC

Fig.53

As a result of the inspections carried out, for the administrative offences of the LEC established in 2017, **330 acts of administrative offences were drawn up**. The AEAOs in 2017 were by about 60 % more than these in 2016.



Source: CRC

Fig. 54

26 Protection of the interests of electronic communication services users

One of the main CRC's objectives is to ensure a high level of consumer protection in their relation with the undertakings providing electronic communications services. In this connection, CRC regularly monitors the problems in the area of consumer protection when providing electronic communications services and takes action to solve them.

In 2017 the Communications Regulation Commission (CRC) received 4 205 complaints by users against different undertakings providing public electronic communications services. CRC received 47 inquiries under the LEC.

Users' complaints concerned the following problems:

- cable damages – 2 complaints;
- credit limit – 28 complaints;
- quality of telephony services/fax – 6 complaints;
- overhead cables – 4 complaints;
- mobile network coverage – 152 complaints;
- quality of Internet access service – 96 complaints;
- unfair trade practices – 85 complaints;
- lack of fixed telephony service – 22 complaints;
- complaints under Art. 231 of the LEC – 38 complaints;
- complaints about the tariffing of mobile telephony services – 8 complaints;
- incompetent service – 104 complaints;
- non-provision of itemized bills – 33 complaints;

- contract termination – 227 complaints;
- bill complaints – 687 complaints;
- contract termination (Art.229a of the LEC) – 38 complaints;
- contract termination (Art. 228, para. 3 and para. 5 of the LEC) – 39 complaints;
- receiving unsolicited commercial messages – 115 complaints;
- geographic number portability – 2 complaints;
- mobile number portability – 27 complaints;
- remote sale contracts – 38 complaints;
- collecting of liabilities by collection companies – 61 complaints;
- roaming – 180 complaints;
- border areas “roaming” – 14 complaints;
- contractual relations – 285 complaints;
- bill for mobile Internet use – 129 complaints;
- locked telephone device – 9 complaints;
- TV service quality – 33 complaints;
- mobile Internet quality – 40 complaints;
- prepaid service issues – 25 complaints;
- complaints from electronic emissions – 6 complaints;
- complaints under Art. 40 – чл. 41 of the General requirements – 11 complaints;
- complaints under Art. 42 – Art.45 of the General requirements – 51 complaints;
- complaints under Art. 46 – Art. 48 of the General requirements – 19 complaints;
- complaints under Art. 49 of the General requirements – 2 complaints;
- complaints under Art. 49a of the General requirements – 18 complaints;
- complaints under Art. 51 of the General requirements – 1 complaint;
- telephone frauds – 20 complaints;
- complaints about constructed electronic communication networks – 9 complaints;
- roaming bills – 184 complaints;
- ambiguity in contractual terms – 32 complaints;
- complaints about value-added services – 179 complaints;
- failure to provide mobile telephone service – 9 complaints;
- quality of mobile telephone service – 10 complaints;
- non-provision of itemized bill – 24 complaints;
- others – 227 complaints;
- activation of an unsolicited service – 2 complaints;
- penalties – 138 complaints;
- unwanted services – 197 complaints;
- illegal constructions – 1 complaint;

- non-provision of contracted service – 531 complaints;
- quality of bundled internet and television – 7 complaints.

In 2017 there was a considerable increase in the number of received complaints compared to 2016 (approx. by 60 %), the complaints were against only two undertakings.

The main reason for the great number of complaints was the fact that since the beginning of 2017 one of the providers experienced serious difficulties in providing their services. It resulted in large number of complains to CRC (over 450) requesting termination of the contractual relations with the undertaking. The Commission has taken action on all climes after which the contract between the provider and the customer was terminated without any penalties.

Regarding the second undertaking, the increase in the number of complaints compared to 2016 (by 555 numbers) was due to three problems related to:

- taken actions by the undertaking on deactivation of the roaming service for specific tariff plans;
- dispute of bills;
- unsolicited services (charging of TV sports channels bundle without an explicit request by the subscriber).

When the complaint concerns non-fulfilment of contractual obligations (contract dispute), the regulator requested opinions of the respective undertaking. As a result of these actions, the undertakings followed the CRC's recommendations. In this connection, of the total number of opinions requested from undertakings, more than half were in favour of the user, which led to resolving the dispute. A number of complaints were forwarded by competence to other state bodies (Commission on Consumer Protection (CCP), the National Construction Supervision Directorate, the Commission for Personal Data Protection, the Ministry of Health, the Prosecutor's Office of the Republic of Bulgaria, etc.).

2.6.1 Amendments and supplements of the General requirements for carrying out public electronic communications (General requirements)

By Decision No. 565/26.10.2017, the CRC amended the General requirements in order to strengthen the protection of the electronic communications services users.

The provisions related to undertakings' obligation to notify the subscriber when the individual contract had been changed as well as the provisions regulating the obligation to publish information on coverage of the mobile networks were specified.

A new Art. 48b was created which regulated the procedure for the user's notification when cancelling a TV channel included in the price package.

With the amendment of Art. 52 additional guarantees were created, that the subscribers would receive and itemized bill/information in the way they had selected.

Other relevant provisions for the protection of the end users of electronic communication services were amended.

262 Procedures carried out by CRC under Art.78 of the LEC

In 2017 CRC adopted 20 decisions under Art.78 of the LEC, regarding non-compliance with the General requirements. With the decisions on the relevant undertakings were imposed obligations for termination of identified violations of the General requirements affecting

consumers, as well as for preventing further infringement of consumer rights

263. Information campaigns to increase the consumer awareness

In 2017 CRC organised 4 reception-rooms on site for end users in the towns of Sliven, Varna, Burgas, and Karlovo where consumers had the opportunity to explain their complaints, as well as get competent advice in order to resolve disputes.

All complaints lodged during the reception-rooms on site have been timely reviewed and actions within the legal framework have been taken.

264. Protection of the customers in relation to introduction of “roam –like-at-home”

The new roaming regulation which has been applied since 15 June 2017 is another positive action in the process of establishing a single European market. As a result, increased usage of regulated roaming services is observed.

One of the main CRC priorities in 2017 was to monitor and control the implementation of the Roaming Regulation. CRC is responsible to implement the necessary measures to put into practice “roam-like-at-home”. Bulgarian operators did considerable efforts to meet the relevant requirements.

CRC received a number of costumers’ complaints against one of Bulgarian operators which had taken activities for roaming deactivation for specific national plans.

The Roaming Regulation does not create an obligation for the undertakings to offer roaming with all tariff plans. But, in order to protect the costumers’ interests, CRC notified the operator about the complaints. By Decision No. 352 of 29 June 2017, CRC requested detailed information from the operators. On the basis of the answers received, CRC conducted a detailed study on the practices of the Bulgarian operators offering roaming services in the tariff plans and notified the European Commission of the results of the study. CRC notified BEREC for the relevant complaints.

CRC received complaints from the customers who did not distinguish between roaming and international call. CRC explained the difference to the relevant users by publishing information on its website. Such information was published on the operator’s websites as well.

CRC received complaints against one of the Bulgarian operators about roaming data volumes that were not calculated correctly. CRC took measures to solve the problem. The operator changed its policy and increased considerably the roaming data volume. For example, for common subscription plan of BGN 25, the operator provides 5000 MB in roaming.

One of CRC priorities is ensuring maximum transparency regarding the conditions of use of electronic communications services, including roaming services. The Commission reported that one of the main ways of providing information is through the undertaking’s contact offices, centers and persons (commercial outlets, account managers, customer service centers etc.)

In order to ensure quality service and the consumers’ right to be informed, CRC notified the undertakings of their obligation to provide complete, clear and accurate information concerning the new roaming rules in the customer contact offices.

265. Measures providing equivalent service access to users with disabilities

At the beginning of 2017 CRC requested that the mobile operators provide exemplary subscription plans for users with impaired hearing and impaired eyesight, meeting the following

conditions: for impaired hearing people – monthly subscription plans with: (a) mainly mobile internet (5 000 MB and more) and minutes for video calls (1500 and more); (b) 500 and more SMSs to all mobile networks and (c) limited (minimum) number of minutes for calls to all national mobile and fixed networks; for impaired eyesight - monthly subscription plans with: (a) mostly (or unlimited) minutes for calls to all national mobile and fixed networks and (b) 1000 MB and more mobile internet. BULGARIAN TELECOMMUNICATION COMPANY EAD, MOBILTEL EAD, TELENOR BULGARIA EAD, „MAX TELECOM OOD and „BULSATCOM” EAD presented specific subscription plans, which largely correspond to the conditions proposed by the Commission.

The Commission’s experts participated in the inter-ministerial group on the amendment of Ordinance No.6 of 13 March 2008 for the universal service under the LEC. The new item 8 of Art.16, para.1 (SG, issue 78 of 2017 г.) included the following special measure: at the request of end users with impaired hearing and impaired eyesight appropriate terminal electronic communication devices are provided, respectively – a specialized application software providing text or other non-voice connection depending on its technical characteristics; the devices, respectively - the - specialized application software should enable the end users with impaired hearing and impaired speech to have access to the single European number 112 in accordance with the Ordinance of the Minister of Interior under Art. 23, para. 2 of the Law for the National emergency call system with a single European number 112. In the new provision, the text about the access fully reflects the CRC proposal, given within the inter-ministerial working group.

At an expert level CRC participated in preparing of the Report on NRAs’ practices for ensuring equivalence of access and choice for disabled end-users на BERECA (BoR (18) 30), as well as in the interdepartmental group at the Ministry of Labor and Social Policy on coordination the implementation of the Action Plan for the enforcement of the Convention on the Rights of Person with Disabilities for the period 2015-2020.

266. Cooperation with CCP

There is a shared competence between CRC and CCP regarding consumer’s protection issues in the area of electronic communications services. For example, complaints related to distance contracts, unfair trade practices, removing unfair contract clauses, charging of unsolicited services, are of CCP competence.

In this respect and in implementation of the law, CRC has referred many consumers’ issues to CCP.

Implementing the provision of Art.37a of the LEC, CRC informed CCP of starting the procedure for amendments of the General requirements, giving it the opportunity to express an opinion on the provisions related to protection of consumers.

IV. BUDGET

CRC budget implementation for 2017

The Communications Regulation Commission is a primary administrator of budget.

By the Law on State Budget of the Republic of Bulgaria for 2017, the Ministry of Finance has determined for the CRC:

- Revenue in amount of BGN 60 000 thousand;
- Expenses in amount of BGN 9 318 thousand.

The Commission administers revenue pursuant to Art.51, para.1 of the LEC and Art.62 of the PSA.

In 2017 the revenue earned from fees, penalty notices and interest amounted to BGN 54 509 thousand which was 91 % fulfilment of the annual plan. Regardless of the public consultations on the prospects of using the available resource in the 1.5 GHz, 2 GHz, 2.6 GHz and 3.6 GHz radio frequency bands, it was not used, which resulted in non-fulfilment of the annual task.

On the other hand, the Commission continued to apply the following good practices to increase the revenue collection while expanding and supplementing them in order to facilitate the undertakings' activity.

- Information about the terms and the methods of fees payment was published every quarter on the Commission's website.
- E-mails about the terms and the methods the terms and the methods of fees payment were generated automatically.
- Personalized e-mails about the specific obligations of the undertakings in case of delay were sent.
- E-invoices were issued on request.
- Personalized e-mail about the fees to be paid was sent when issuing and/or amending or supplementing an authorization for use of individually assigned scarce resource.

Additional actions for increasing the revenue collection undertaken by CRC:

- Issuance of acts for establishment of public state receivables when public debts to CRC had not been paid
 - Sending of enforcement of unexecuted acts for establishment of public state receivables and penal decrees to the National Revenue Agency by which in 2017 additional revenue amounted to BGN 30 thousand was collected.

The structure of the revenue part of the CRC budget for 2017 was as follows:

Table 12

Type of revenue	Value in BGN thousand	Share (%)
1. Own revenue approved with the CRC budget for 2017	60 000	
2. Revenue realised for 2017, incl.:	54 509	100.00
- one-off fees under the LEC	1 027	1.88
- one-off fees under the PSA	7	0.01
- administrative annual charge-control	4 532	8.31
- charges for the use of an individually assigned scarce resource – radio frequency spectrum	37 386	68.59
- charges for the use of an individually assigned scarce resource – positions on a geostationary orbit assigned for the Republic of Bulgaria according to international agreements	144	0.27
- charges for the use of an individually assigned scarce resource following tender calls	2 375	4.36

