



Regional Workshop for Europe and CIS on Transition to Digital Terrestrial Television Broadcasting and Digital Dividend in Europe

BUDAPEST, Hungary 05-07 May 2015

MEETING REPORT

1. Background

Regional Workshop for Europe and CIS on "Spectrum Management and Transition to Digital Terrestrial Television Broadcasting", organized by the International Telecommunication Union (ITU), in collaboration with the National Media and Infocommunications Authority of Hungary, was held from 5 to 7 May 2015 in Budapest, Hungary.

ITU's policy on regional presence is designed to enable the Union to work as closely as possible with its members and to tailor ITU activities to meet the ever-increasing and diverse needs of the member states.

The Regional Initiative on assistance to the Central Eastern Europe Region on the transition from Analogue to Digital broadcasting was approved by the World Telecommunication Development Conference in May 2010, at the Plenipotentiary Conference in October 2010, and the WTDC-14, Dubai, adopted Regional Initiative EUR1 at on Spectrum Management and Transition to Digital Broadcasting as well.

In scope of the Regional Initiative 2010 there were held the following activities:

- Regional workshop on Switchover from Analogue to Digital Terrestrial Television Broadcasting for Central and Eastern Europe (Regional workshop on Switchover from Analogue to Digital Terrestrial Television Broadcasting for Central and Eastern Europe), 2-4/5/2011, Győr, Hungary;
- ITU Regional Development Forum for Europe and Regional Seminar on Transition to Digital Terrestrial Television Broadcasting, Borderline Frequency Coordination and Digital Dividend for Europe and CIS, 7-9/05/2012 Warsaw, Poland;
- Regulatory Seminar for Europe on "Transition to Digital Terrestrial Television Broadcasting and Digital Dividend" 5-7/11/2012, Budapest, Hungary.
- Regional Seminar for Europe on "Transition to Digital Terrestrial Television Broadcasting and Digital Dividend in Europe", 29-31/01/ 2014, Budapest, Hungary

This Workshop is organized in the context of the European Regional Initiative approved by WTDC-14 that seeks to provide a basis for the exchange of best practices encountered on the path of digital terrestrial television broadcasting transition, and works towards the way to maximize the economic and social benefits of the digital dividend. It also considered how to develop further a unified approach in order to enhance the advantages that it would bring to the region of Central-Eastern Europe and how to enhance spectrum management tools and structures.

2. Introduction

The meeting was held in Budapest Mercure Buda Hotel in the organization of National Media and Infocommunications Authority of Hungary. The venue was excellently chosen by the host providing all necessary facilities for successful and smooth development of this large scale event.

In total there were 51 delegates present representing Albania, Bosnia and Herzegovina, Croatia, Czech Republic, France, Germany, Hungary, Kyrgyz Republic, Moldova, Netherlands, Poland, Romania, Russia, Serbia, Tajikistan, Uzbekistan, Switzerland. The majority came from national regulators. In addition, several companies, operators and educational organizations found their interest in taking part in this prestigious event (e.g. LS Telcom AG, Germany, Antenna Hungária Zrt. Czech Technical University in Prague and Hungarian Cable Communications Association (HCA), OJSC «Tochiktelecom», Tajikistan).

Other participants were representatives of international associations and organizations as follows: International Telecommunication Union (ITU), European Broadcasting Union (EBU)/ DigiTag and GSM Association (GSMA) .

The fact that a big number of participating countries are still in process of Analogue to Digital Broadcasting Transition appears to be a clear evidence that this RI is quite demanded and the countries which have successfully completed the process may well help sharing good experiences with those who are still along the road to the transition.

This Workshop was mainly dedicated to three main topics:

1. Last minute before analogue switch off (ASO) and activities after the ASO
2. Utilization of Digital Dividend
3. Spectrum Management and related tools.

A fruitful and very useful discussions were held during all three days not only at the Sessions but also outside during the breaks.

3. The Workshop

Day One

3.0 Opening ceremony and Welcoming address

Dr Monika Karas, President of NMHH, greeted and welcomed all participants pointing out to the necessity of completing process of Digital switchover in all ITU countries since this has been one of the grandest events in recent years and definitely in the world history of television.

Mr Istvan Bozsoki, Telecommunications Development Bureau, ITU, delivered a message which says that *European Regional Initiative on Spectrum Management and Transition to Digital Broadcasting seeks to provide a basis for the exchange of best practices encountered on the path of digital terrestrial television broadcasting transition, and works towards the way to maximize the economic and social benefits of the digital dividend. It will also consider how to develop further a unified approach in order to enhance the advantages that it will bring to the region of Central-Eastern Europe and how to enhance spectrum management tools and structures.*

After his speech a video was presented : **150 years of ITU-** giving a special momentum to this very important and significant anniversary.

Mr Peter Vári, Deputy Director General, NMHH, Hungary, officially declared the Workshop open.

3.1. Session 1: European Regional Initiative – Chaired by Mr Peter Vari

3.1.1. Regional Initiatives adopted at WTDC-14: Mr Marsel Kuzyakov, Telecommunications Development Bureau, ITU, presented adopted plan of activities, schedule, mechanisms and workflow, as well as expected results. He has highlighted RI-EUR1 – Spectrum management and transition to digital broadcasting objective, which is *to foster regional cooperation, mainly supplemented by direct assistance to the administrations in the process of analogue TV switch off, and management of the frequencies in the digital dividend bands, which are to be utilized bearing in mind the most effective use of radio spectrum.*

• *Expected results: Assistance to the countries in need in the following:*

1. Transition from analogue to digital terrestrial broadcasting and switch-off process,
2. Capacity building in spectrum management, including in the digital dividend band,
3. Elaboration of studies, benchmarks and guidelines on the economic and policy aspects of the assignment and use of the radio-frequency spectrum.

3.1.2. Update on the replies to the Questionnaire 2013

Mr Istvan Bozsoki, gave updated information on the replies to the Questionnaire which was developed after the ITU Regional Seminar for Europe on Transition to Digital Broadcasting and Digital Dividend held in Budapest, Hungary, on 5-7 November 2012., after which Council 2014 requested ITU to provide an analogue to digital switchover stocktaking for assisting the Member States in their transition process. *Although many European countries completed transition from terrestrial analogue to terrestrial digital TV, but there are some countries which are still in the process of transition. Process should be completed by 17 June 2015 (Final Acts of RRC-06). In order to get relevant updates and new information, BDT sent a letter on 10 October, 2014 to competent authorities of European countries. A reminder was sent on 9 December 2014. ITU expert Mr. Momcilo Simic (Serbia) prepared a short report based on the replies.*

3.1.3. Digital Switch Over (DSO) Database

Mr Istvan Bozsoki, gave information and provided a short demonstration on DSO Database which was initiated at the Council 2014, 7 May, requested by Kenya with the aim to provide an analogue to digital switchover stocktaking for assisting the Member States in their migration process. The database has been established featuring many functions such as: Filtering on the different items (e.g. by region, date, technology), detailed displaying of the available information (e.g. for a country, relevant events, documents, and websites), displaying information on a map, data entry/update possibility for the administrations. He urged participants to provide information or update the existing data if required.

3.1.4. BDT and BR activities on the transition

Ms Ilham Ghazi, Radiocommunications Bureau, ITU and Mr Istvan Bozsoki presented analyses of activities and proposed procedures among regions and different groups of countries (ATU, SSA, and ASMG) in accordance to GE-06 requirements. Experience in these activities ITU will use in further actions giving the assistance all along the process to other countries.

3.2. Session 2: Digital terrestrial television transition – last minutes before analogue switch off (ASO) - Chair: Mr Laszlo Pados, NMHH, Hungary

3.2.1. GE06 requirements on the ASO

Ms Ilham Ghazi, Radiocommunication Bureau, ITU, has emphasized that The Transition period shall end:

- *VHFBand:*
 - *on 17 June 2015 at 0001 hours UTC;*
 - *on 17 June 2020 at 0001 hours UTC for the countries listed in Article 12 of the GE06 Agreement*

- *UHFBand: on 17 June 2015 at 0001 hours UTC all countries.*

After the end of the transition period the analogue Plan entries shall be cancelled, Provision No. 4.1 of Article 4, referring to the modification of the analogue Plan, will cease to apply, and the Plan remarks with respect to analogue assignments will cease to apply. If certain country cannot meet the deadline it has to ensure that no harmful interference is caused to the neighbouring countries /and they cannot complain in case of interference received from from them (8.5 and 4.4 of the RR). When interference is caused by an analogue emission, the broadcaster is obliged to take immediate action to resolve the interference, and as soon as the interference is reported.

Mr Bernard Pauchon, Broadcast Networks Europe & DigiTag & EBU, made an overview of the European situation of introduction of digital TV from DigiTag perspective. DigiTAG is an association of stakeholders in the digital terrestrial TV industry. Its members include: broadcasters, network operators, regulators, and professional equipment and consumer electronics manufacturing organisations. DigiTAG's mission is to defend and promote digital television worldwide, regardless of the technical standard used on the DTT platform. He emphasized a need for having a good strategy and policy including legislative framework, informative and communication campaign, financial plan and good technical and technological approach and plan. He pointed out that a number of countries even in the North of Region 1 will not meet the 17th of June ITU milestone for switching off Analogue TV.

3.2.2. Country Experiences on the ASO

Germany - Mr Elmar Zilles, Head of Section, Broadcasting, Bundesnetzagentur, has given full details about basic characteristics for a transition, differentiating various approaches and several countries' experience, whilst highlighting several common elements such as signal coverage, capacity, regulatory impact, number of TV programmes, structure and content of TV programmes which have to be taken into serious consideration and represent fundamental requirement for successful ASO.

The Netherlands - Mr Aljo van Dijken, Radiocommunication Agency, presented the situation in the Netherlands. This is an example of a success story, where all requirements were met on time, and nowadays there is opportunity to optimize existing networks and make digital plan for the country more efficient by asking some more resources on the reasonable ground.

Other countries presented their experiences and there were examples demonstrating the level of the implementation of the national strategies ranging from full (Croatia, Poland, Tajikistan, Uzbekistan), partial but still on time to almost meet the deadline [Serbia], over those who partially started but would have a significant delay for a ASO spreading over period from 2015-2017 (Kyrgyz Republic, Romania), and to a complete failure with no clear view what would happen after ASO deadline (Bosnia and Herzegovina). Specific situation has been presented (Albania) where digital broadcast already started, but not under control of the national regulator and unlicensed.

3.2.3. Open Discussion

The presentations were very detailed and very clear and comprehensive. There were not many questions. There was one *comment* related to difference between information being presented at the Workshop in comparison to what has been sent to ITU for the DSO Database. The latest update has to be sent to the ITU.

Day Two

3.3. Session 4: Post ASO – Chair: Ms Ilham Ghazi

Ms Mária Kissné-Akli and Mr Zsolt Ferencz, NMHH, Hungary, presented a story of introducing digital radio in Hungary on the 12th VHF channel, expressing the legal background to launch digital radio, the procedures including the tender for rights to operate one T-DAB multiplex in Hungary and what were the results of the poll in Hungary.

Mr Elmar Zilles made a thorough and very detailed presentation on activities after ASO in Germany. One of the main conclusions was in relation to regulation, i.e. there was necessity for Technology neutrality, Flexibility. In addition to that regulation should enable business planning and not narrow it down. Also regulation should provide planning certainty. Regulatory framework should not exclude, rather encourage incentives and secure investments and consider the different long term initial scenarios in various European countries.

In the short and medium time frame the different infrastructure conditions in the various countries have to be considered and developed in order to satisfy the existing and developing requirements of the users.

As a post ASO activity in Germany it has been decided by both industry and market players on one side and policy makers and regulator on the other side to introduce DVB-T2 in Germany. The starting date is spring 2016, with the following scenario:

- Two bouquets
- HEVC-coded (h.265)
- About 35 sites all over Germany
- Main programs of public providers “on board”
- Transition: by middle of 2019
- Public providers: three nationwide multiplexes
- Private providers focus on densely populated areas
- Some local bouquets also

Mr Aljo van Dijken in the capacity of Chairman of WEDDIP explained that post ASO period will be used for strengthening and promoting the Regional Initiatives in order to get more quality, capacity and more reliability in broadcast operations, whilst securing enough spectrum for modern radio technologies.

Mr Henrik Schneider and Mr Zsolt Arki, Antenna Hungaria (AH), Hungary

After presenting a short history of ASO and informing on successful ASO which took place in 2013, Mr Arki explained key factors of a smooth migration from analogue to digital, and stressed some interesting feature of DTT service in Hungary. He also explained current situation of DTT networks. AH operates a nationwide DTT network with 5 MUXs providing: FREE-TO-AIR – MinDig TV, PAY-TV services – MinDig TV Extra covering 99% of the country (in case of four MUXs. Mr Arki presented future plans and further development of platforms, services and technical solutions whose were towards a general objective to create an attractive and dynamic image for the DTT platform. Some public radio channels, News, Weather forecast, Sports news commenced to broadcast too.

3.3.1. Country Experiences on planned/ongoing activities (frequency planning, licensing, new services, etc.)

There were only two presentations. Since there would be unlikely to expect the deadline to be met in Bosnia and Herzegovina, the presentation showed some urgent actions in area of re-planning, licencing and putting all stakeholders in full engagement including Cable TV operators, Network operator, Telco’s. It would be of great interest to see after ASO how this plan would work and if it was doable.

In Croatia main focus after ASO is on Digital Dividend utilization. Therefore strategy for second digitalisation (switchover to DVB-T2) and release of second digital dividend (694-790 MHz) is in preparation; TV licenses valid until 2021. Preparation for DD2 (694-790MHz): re-planning of the current DTT networks; Analysing future needs for the DTT capacity; Defining future standards (DVB-T2 and H.264 or H.265) are the key activities in future time.

3.3.2. Open discussion

A question was addressed to the German delegation, asking for some further explanation about auctioning and polling in Germany. Mr Zilles gave a full answer explaining the two aspects of auctioning aims. One is to provide some financial assets which would be directed in some areas of interest. The other aspect is to make some value added services into broadcast itself.

The other question was related to mechanisms and models of fees collecting in Croatia as general example for having twofold fee collection: one for licence and the other for spectrum utilization. It showed that this model is widely implemented throughout the world (Europe).

3.4. Session 5: Utilization of the Digital dividend – Chair: Mr Istvan Bozsoki

Mr Andreas Roever, European Commission-made an overview of current situation and key actions towards fully transitioned to digital TV Europe and enabling utilization of DD and more. It has been stated that countries supporting the DD strategy should be given the option of "gradually gearing in". DD debate should not be dominated by interests of specific sector. Careful choice of spectrum planning frame amongst supporting countries: > coordination mechanisms amongst involved countries needed. Derogation mechanism is unsatisfactory: substantial delays in assignments in the 800 MHz band

Ms Ilham Ghazi-It has been recommended to the broadcasting community to implement technological innovations, such as DVB-T2, compression technologies, and single-frequency networks (SFNs). Also to increase spectrum efficiency and enable DTT platforms to provide more high-definition (HD) services, which would make DTT services more attractive to consumers. This would lead to less spectrum needed for broadcast and possible usage of TV frequencies < 694 MHz. It is recommended to harmonize the 700 and 800 MHz bands for the Mobile operations too.

Mr Bernard Pauchon- Stressed the view with significant hesitation on Digital Dividend plans.

It is clear that DD1 (800 MHz band) is a true win-win digital dividend offering features and advantages of high value. DTT Networks are cost efficient, spectrum efficient, reliable. It is certain that IMT industry is always looking for new spectrum, but there are some uncertainties in this fact since legacy systems might be in a near future completely abandoned and released spectrum ready for use by modern and advanced technologies. Also, Wireless Broadband is not limited to Mobile Broadband, and includes WiFi as well as satellite. In EU, the goal set in the RSP of identifying 1200 MHz spectrum for Wireless Broadband by 2015 is already met

Possible DD2 (700 MHz) is not a dividend for All! So no more mention of DD2, but reference to use 700 MHz for IMT! Be careful if planning to use 700 MHz band for IMT. Mr. Pauchon proposed *NO Change for upcoming WRCs for spectrum below 700 MHz band.*

Mr Daniel Pataki, GSMA - Opposite to the previous, view mobile industry is definite about facts that mobile and TV is changing and the digital dividend can help both. Demand for mobile broadband is growing faster than anyone's expectations. There's an urgent need to secure more spectrum to support growing traffic – especially video. It must include coverage bands so everyone benefits regardless of wealth or location. TV services are radically changing due to the on-demand revolution, HD & mobile, terrestrial TV is vital today, and in future, but on-demand, HD and mobile are changing the market. In the US, revenues from the 600 MHz mobile auction will be used to fund TV service upgrades. Reduced broadcast spectrum does not mean reduced services – expansion is still possible. Mobile offers an amazing TV content opportunity – more eyes on more screens in more places. The digital dividend can continue to be a win-win for TV and mobile. WRC-15 is an opportunity to benefit everyone by enabling mobile in 700MHz and sub-700MHz

3.4.1. Country Experiences (planned services, implementation)

Three presentations were held. Bosnia and Herzegovina secured long time ago spectrum resources for Digital Dividend 1. It is also not easy to estimate a real need for more spectrum in Bosnia and Herzegovina, but some

preliminary research shows that the utilization trend for both mobile voice and data are not inclining so much. It is to be expected that after de-blockade of DSO process all market would blossom.

Since the after ASO strategy is based on DD utilization Croatia is heading up to even DD2.

The current analyses in Kyrgyz Republic of what might happen if DD1 and DD2 is utilized shows loss of 3-12 layers of the digital plan based on GE-06. They have justified fear of making a big impact on society which is of more “viewer” profile than gadget oriented.

Presentation of Albania in Session 2 was dealing also with Digital Dividend.

3.5. Session 6: Spectrum management

Mr Andreas Roever presented EU Recommendations in relation to repurposing the band 694-790 MHz for wireless broadband by 2020 +/- 2 years; Safeguard broadcasting in the band 470-694 MHz until 2030, with a review of market realities and national conditions to take place by 2025; Where coexistence between broadcasting and downlink-only broadband is feasible, this should be possible to accommodate at national level. The Commission is now developing its response to these recommendations. Any decision to repurpose the 694-790 MHz will be likely to need broad political agreement by our co-legislators.

Mr Roever also explained mechanisms and situation of granting rights of spectrum use in the EU

- Rights can be granted by the Member States to electronic communication network providers or to broadcasters, both models are used.
- Procedures shall be open, objective, transparent, non-discriminatory and proportionate.
- An exception to the openness requirement may be applied in the case of broadcasters if necessary to achieve general interest objectives as defined by the Member States.
- Tenders or beauty contests can be used.

3.5.1. Country Experiences

During the session three countries have presented (Albania, Bosnia and Herzegovina, Croatia) how they run or rule (manage) structures in their countries. What they use as Spectrum management tools, how they conduct cross-border frequency coordination, what are their spectrum fee policy and models. Also all three presentations illustrated each country radio-monitoring facilities, assets and features. This session was quite technical and useful for all other administrations to receive some new or to confirm their existing knowledge.

Day Three

3.6. Session 8: Presentations – Chair: Mr Jasmin Musovic, Bosnia and Hercogovina

3.6.1. BDT activities in field of Spectrum Management

Istvan Bozsoki presented recent activities of the ITU regarding:

- Spectrum Management Master Plan (SM MP)
- Spectrum Management Software (SMS4DC)
- Cross-border frequency coordination (HCM4A)
- Spectrum Management Training Program (SMTP)
- Spectrum fee

3.6.2. SM tools

Dr Robert Bestak, Czech Technical University in Prague, presented a training program as a trial implementation of an SMTP modul which would be conducted at the Czech Technical University in Prague, starting on fall this

year. The training would include a monitoring module of the SMTP : Basic Theories, Signals, Modulations, Spectrum, Antennas – basic parameters, Monitoring equipment – principles, Introduction to EMC, Propagation, SW monitoring, Practical Measurements, Signal parameters, Modulation parameters, Antenna parameters, Occupied bandwidth measurements, Interference analysis, Direction finding,

Mr Janos Buki, Spectrum Management IT system (STIR), National Media and Infocommunications Authority (NMHH), Hungary, presented Spectrum Management IT System (STIR), a very useful spectrum management tool. The application is fully developed and designed in Hungary. On the question of Mr. Bozsoki he explained that the tool is available on the website of the NMHH, other countries can have access to it. It will be further investigated how can it be used for ITU assistance to developing countries.

Mr Eberhard Heidrich, Head of Division, LS Telcom, Germany-presented general approach to spectrum management tools and requirements by which implementation and control of systematic Spectrum Management Processes become easy to handle from perspective of Integration of various Business Processes / Units, Administrative and Technical Spectrum Management, Radio Monitoring, Most efficient Use of Spectrum. This model provides the best possible Services to the Spectrum Users. By this administrations are enabled to exploit spectrum on full Economical Value basis.

3.7. Additional proposals for implementing in RI – Chair: Mr Istvan Bozsoki

3.7.1. Summary and way forward

As a resume of the Workshop it has been stated that it was well organized, well accommodated, and the organizer, NMMH made a wonderful effort to ease intensive work of almost three days to all participants.

It has been noted that all discussions were well accepted, delightfully considered for the benefit and in support for those who are not in well-shaped framework of analogue to digital broadcast transition.

All agreed that DSO database is of a great importance to all and should be updated and upgraded in due time, so all administrations were encouraged to check their own data in the database and send the newest information.

Some ideas of making one extra meeting of the same character after 17th of June, just to make some cross-considerations on what really happened after the deadline and what are the challenges from real life.

It has been also recommended to organize a workshop on spectrum fee in addition to all other planned RI activities.

3.8. Closing Remarks

Mr. Istvan Bozsoki, International Telecommunication Union (ITU) thanked to NMHH the excellent organization of the meeting and the participants the active contributions.

Mr. Peter Vari, NMHH, expressed thanks to all participants for their very active and fruitful activities during the Workshop. He also wished to all implementation of their own strategic plans towards successful ASO and activities after ASO. By this the Workshop has been ended.

NOTE: Sessions 3 and 7 are not listed here in the report since these sessions were just continuation of the session before (2 and 6) chaired by the same person.

Annex

Participants

- [1] **Albania**, Mr. MITELI Vasil, Director Frequency Monitoration, , Mr. MEDA Shefqet, Director Frequency Management, Electronic And Postal Communications Authority
- [2] **Bosnia and Herzegovina**, Mr. MUSOVIC Jasmin, , Director of Radiomonitoring, IT Support and License Compliance, Communications Regulatory Agency
- [3] **Croatia**, Ms. SAKAL Ivancica, Department Manager, Mr. VIDAKOVIĆ Danijel, , RF Spectrum Monitoring Department Manager, Croatian Regulatory Authority for Network Industries, Radiocommunications
- [4] **Czech Republic**, Mr. ONDRACEK Petr, Dr/ Senior Expert, Mr. BESTAK Robert, Dr/ Associate Professor, Czech Technical University in Prague
- [5] **France**, Mr. PAUCHON Bernard, Broadcast Networks Europe & Digitag, also representing EBU, BNE Special Advisor & Chairman Digitag Spectrum and Networks Group,
- [6] **Germany**, Mr. HEIDRICH Eberhardt, LS Telcom AG, Head of Division,
- [7] **Germany**, Mr. ZILLES Elmar, Head of Broadcasting, Federal Network Agency
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- [10] **Hungary** Dr. FIALA Karoly, Spectrum Advise cc, Consultant
- [11] **Hungary**, Mr. KERY Ferenc, Hungarian Cable Communications Association (HCA), President,
- [12] **Hungary**, Mr. ARKI Zsolt, Head of Development Department, Mr. SCHNEIDER Henrik, Director of Media Services Division, Ms. BÁNKUTI Erzsébet , Antenna Hungaria,
- [13] **Hungary** , Dr. HUSZTY CSABA, CEO, Dr. HUSZTY GÁBOR, Entel Engineering Research & Consulting
- [14] **GSMA**, Mr. PATAKI Daniel, Vice-President, Regulation,
- [15] **Kyrgyz Republic**, Mr. Maksat Dzhylyshbaev, Head of international protection of frequency assignments department, State Communication Agency under the Government of Kyrgyz Republic,
- [16] **Moldova**, Ms. POPOVICI Valentina, Deputy Head of Analitical Reseach Section, Ministry of Information Technology and Communications,
- [17] **Moldova**, Mr. TURCAN Andrian, Superior Specialist, Mr. LUNGU Rasid, Main Specialist National Regulatory Agency for Electronic Communications and Information Technology (ANRCETI),
- [18] **Moldova**, Mr. IACOB Mihail, SE Radiocommunications, Director General
- [19] **Netherlands**, Mr. VAN DIJKEN Aljo, Senior Advisor International Spectrum Affairs, Radiocommunicaiton Agency Netherlands, Chairman of WEDDIP
- [20] **Poland**, Mr. PINCIUREK Tomasz, Specialist, Ministry of Administration and Digitization
- [21] **Romania**, Mr. PREDESCU Mihai, Mr. MOROCZA Zoltan, National Authority for Management and Regulation in Communications of Romania - ANCOM,
- [22] **Russia**, Mr. SHAMOV Vladislav, Head of Division, Mr. ROMANOV Andrei, Engineer, Federal State Unitary Enterprise “General Radio Frequency Centre

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- [23] **Serbia**, Ms. RADISAVLJEVIC DJORDJEVIC Vladana, Head of the Group for the Development of Electronic Communications, Sector for Electronic Communications and Postal Services, Ministry of Trade, Tourism and Telecommunications,
- [24] **Tajikistan**, Mr. KHIMATOV Muzafar, OJSC “Tochiktelecom”, Director General
- [25] **Uzbekistan**, Mr. SAIDOV Kozim, Chief of Television and Broadcasting department, State Inspection on Supervision in the Field of Communication, Informatization and Telecommunication Technologies
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- [27] **Uzbekistan**, Mr. TURGUNOV Makhmud, Manager in Technical Industrial Laboratory, State Unitary Interprize Centre of Radio Communication Broadcasting and Television
- [28] **ITU**, Mr. BOZSOKI Istvan, Head of SBD Division, BDT, Ms. GHAZI Ilham, Head of BCD Division, BR, Mr. KUZYAKOV Marsel, Programme Officer, BDT
- [29] **EU**, Mr. ROEVER Andreas , European Comission,