

Spectrum Management and Transition to Digital Terrestrial Television Broadcasting

21-23 March 2016, Bucharest

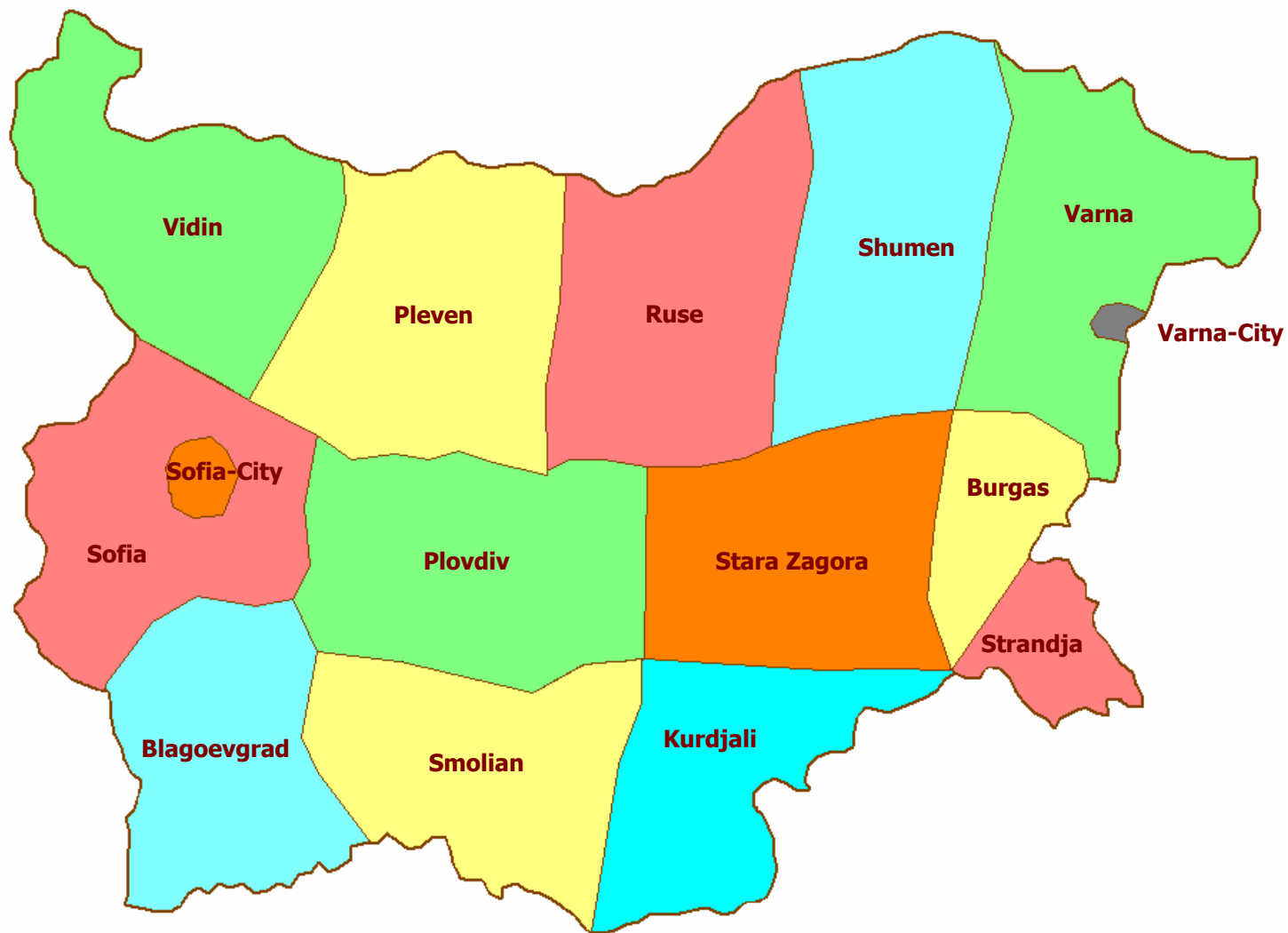
Analogue Switch-Off strategies, experiences, and network implementation

Vanya Staneva

Communications Regulation Commission



Regional Radiocommunication Conference RRC 06



The transition in Bulgaria



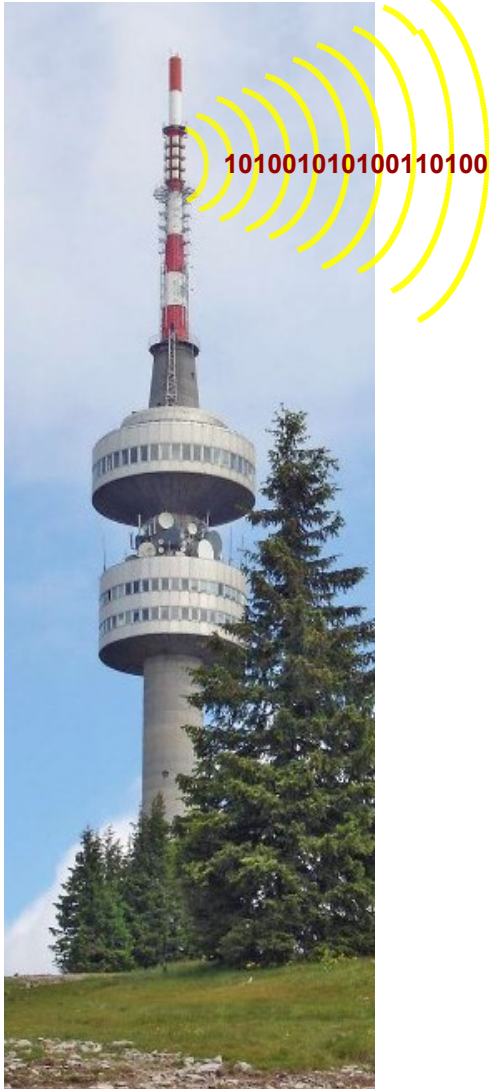
Legislation:

- ◆ Law On Electronic Communications
- ◆ Radio and Television Act
- ◆ Plan for the introduction of digital terrestrial television broadcasting (DVB-T) in the Republic of Bulgaria (Plan 2008, Plan 2012)

Undertakers in Bulgaria

Licenses for digital terrestrial television:

- ◆ **NURTS BULGARIA** – network for the territory of Sofia
- ◆ **NURTS DIGITAL** – two networks with national coverage for broadcasting commercial programs, in accordance with the first phase of Plan 2008
- ◆ **FIRST DIGITAL** - network with national coverage for broadcasting public programs, in accordance with the first phase of Plan 2008
- ◆ **HD MEDIA SERVICES** - three networks with national coverage for broadcasting commercial programs, in accordance with the second phase of Plan 2008
- ◆ **BULSATCOM-** network with national coverage for broadcasting commercial programs, in accordance with the second phase of Plan 2012



Technical parameters of the networks

- ◆ System & modulation - **DVB-T, MPEG-4**
- ◆ Mode – **8k**
- ◆ Guard interval – **1/4**
- ◆ Code rate – **2/3; 3/4**
- ◆ Modulation – **64 QAM**
- ◆ Capacity – **19,91 Mbit/s; 22,39 Mbit/s**
- ◆ Minimum field strength:
 - For urban territories, above 30000 inhabitants – **85 dB μ V/m**
 - All other territory of the country – **56 dB μ V/m**
- ◆ Polarization – **vertical**

Must Carry Obligations

First phase:

- ◆ bTV Media Group, Central European Media Enterprises – program “bTV”
- ◆ NOVA BROADCASTING GROUP AD, MTG – program “Nova TV”
- ◆ bTV Media Group – program “bTV Action”
- ◆ TV 7 – program “TV 7”
- ◆ Bulgaria On Air – program “Bulgaria On Air”
- ◆ DARIK RADIO – program “DRT”
- ◆ BBT – program “News 7”
- ◆ Two more programs of bTV Media Group and NOVA BROADCASTING GROUP AD
- ◆ Up to 4 programs of Bulgarian National TV and up to 4 programs of Bulgarian National Radio in the network with national coverage for broadcasting public programs



Second phase:

- ◆ Three licensed Bulgarian tv programs defined by the Council of electronic media
- ◆ Three more programs of each of the operators - bTV Media Group and NOVA BROADCASTING GROUP AD

Challenges (1)



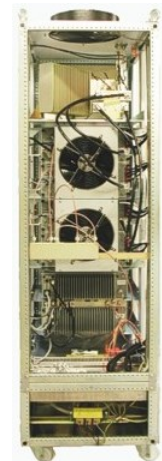
Technical:

- ◆ Scared resource:
 - the use of frequencies for analog broadcasting – new allocation needed
 - a big part of frequency spectrum for TV broadcasting is used for the needs of national security
- ◆ Simulcast of analogue and digital transmitters in the country and neighboring countries



Financial:

- ◆ Funding for the release of radio resources employed for the needs of national security



Challenges (2)



Social and cultural aspects :

- ◆ Creating a focal point for the transition from analogue terrestrial to digital terrestrial television broadcasting
- ◆ Organize and launch an information campaign
- ◆ Helping low-income households.
- ◆ Availability and accessibility (affordability) of end user equipment
- ◆ Availability of content

State Commitment

- ◆ In 2011, a new date for ASO was defined in Law On Electronic Communications – **1st of September 2013**
- ◆ Government's budget for 2012 set aside BGN 17.5 million (€8.94 million) for the **DTT help scheme and information campaign.**
- ◆ The Council of Ministers has adopted a new Plan for the introduction of digital terrestrial television broadcasting (DVB-T) in the Republic of Bulgaria (Plan 2012)



Following actions (1)



- ◆ Create digital TV Authority, including all representatives of the government, regulators and stakeholders
- ◆ Reassignment of spectrum for broadcasting analog transmitters in order to practice the transition from analogue to digital terrestrial television broadcasting and ensuring interoperability of analog and digital TV transmitters in the simulcast period
- ◆ Monitor compliance with the milestones and deadlines for deploying networks for terrestrial digital broadcasting
- ◆ Launch large-scale, comprehensive and effective information campaign among the population about the upcoming changes and end date to stop analogue terrestrial television broadcasting



Following actions (2)

- ◆ Subsidize the cost of **DTT receivers for low-income households.**
- ◆ Starting the **simulcast period at 1st of march 2013.** The simulcast lasted 7months.
- ◆ Part of media service providers, required distribution provided programs of digital terrestrial television broadcasting undertakings



Consequences and Results

- ◆ Persistent trend for constant drop of number of viewers of digital terrestrial television.
- ◆ The number of digital TV programs broadcasted on the national multiplexes decreased by 5.
- ◆ Second Digital Dividend and implementation of the band 470-694 MHz for the broadcasting services - SEDDIF.

Spectrum Management and Transition to Digital Terrestrial Television Broadcasting

21-23 March 2016, Bucharest

THANK YOU !

Vanya Staneva

Communications Regulation Commission

