
**ITU Regional Seminar on
Transition to DTTV Broadcasting and
Digital Dividend in Europe**

Budapest, 29-31 January 2014

**Session One:
Transition to DTTV Broadcasting
Bulgarian Experience and Lessons Learned**

Mr. Petko Kantchev,
Adviser
MTITC, Bulgaria
petko.kantchev@ties.itu.int



Committed to connecting the world

ITU Regional Seminar on Transition to DTTV Broadcasting and Digital Dividend in Europe

The **First Strategic Plan for transition to DTTV Broadcasting** has been elaborated by eminent group of experts and approved at session of the Council of Ministers of Republic of Bulgaria held on 31 January 2008 (Reference: Protocol No 5 by decision on Agenda item 24) by application of top-down approach.

Summary of this so called “**Plan 2008**” has been included in the ITU-R Publication BT-2140-6, namely on pages 57 and on 173 to 178. Plan 2008 has been amended twice with further decisions of the Council of Ministers in March and December 2009.

It is worth mentioning that:

- the Law for Radio and Television has been promulgated in 1998 and amended more than 25 times; and
- the Law for Electronic Communications has been promulgated in 2007 and amended more than 5 times by the Bulgarian Parliament. Nevertheless they have led to cases submitted to juridical system for legal interpretation. Instead of legislation motivating competitors to share the available analogue broadcasting infrastructure readily available, legislative texts of dubious nature were preventing analogue broadcasting operators from application for DTTV broadcasting license.



Committed to connecting the world

ITU Regional Seminar on Transition to DTTV Broadcasting and Digital Dividend in Europe

Said over-optimistic **Plan 2008** has stipulated that the **ASO shall be held on 31 December 2012** and that no analogue TV broadcasting shall be permitted beyond this date. It took into account the outcome of the RRC-2006, embraced MPEG-2 standard and first test DTTV broadcasts started to be carried out.

This Plan however has become subject to fierce resistance by relevant stakeholders in TV broadcasting chain since it was developed without their own participation and consent.

Hence a wise decision was taken at highest level that the whole process shall be revisited with active participation of relevant stakeholders by applying this time a bottom-up approach and said Plan 2008 be amended accordingly.

Dedicated Body on Digital Television (equivalent to National Task Force or Committee on Digital Television being set up world-wide) was mandated to be created by the Law whereby all decisions were subject to prevailing discussion by relevant stakeholders within the TV broadcasting chain



Committed to connecting the world

ITU Regional Seminar on Transition to DTTV Broadcasting and Digital Dividend in Europe

The Council of Ministers by its decision No 494 of 22 August 2013 has approved **the update of the Plan for Transition to DTTV Broadcasting (Plan 2012)**.

It takes into account the derogation granted by EC to this country to use band 790-862 MHz for the purpose of the transition to DTTVB by 2015 at the latest (Decision 243/2012/EC).

It defines the purpose of the transition and the introduction of DTTVB.

It further defines the mission and tasks of the transition to DTTVB:

- prompt information campaign;
- access to non-encrypted DTTVB programmes with limited number of encrypted ones during initial phase;
- liberation by Ministry of Defense of frequencies within 800 MHz band subject to relevant budgetary appropriations;
- availability of STB and TV sets MPEG-4 standard.

The main purpose of this Plan was to ensure that Analogue Switch-Off (ASO) date shall be 01 September 2013.



Committed to connecting the world

ITU Regional Seminar on Transition to DTTV Broadcasting and Digital Dividend in Europe

For **the needs of analogue terrestrial TV broadcasting** the following frequency assignments and number of TV Channels have been used:

- Bulgarian National Television (BNT) network: 668 frequency assignments, majority in Band III;
- BTV Media Group (BTV) network: 672 frequency assignments, majority in Bands IV and V;
- Nova Broadcasting Group (NovaTV) network: 215 frequency assignments in Bands IV and V;
- For local TV terrestrial broadcasting coverage networks: total of 118 frequency assignments (117 of them in Bands IV and V).

Nota Bene: Out of all 49 TV channels in Bands IV and V the total of 26 TV channels are used by the **Ministry of Defence**. Part of them could be used for limited local broadcasting subject to relevant permission issued by said Ministry.



Committed to connecting the world

ITU Regional Seminar on Transition to DTTV Broadcasting and Digital Dividend in Europe

Summary of the DTTV Broadcasting spectrum resources planned by RRC-06 (Geneva Plan 2006):

- 10 allotments for DTTVB networks for national coverage;
- 31 allotments for DTTVB networks for regional coverage: and
- 26 allotments for DTTVB networks for regional coverage of the towns Sofia, Plovdiv and Varna.

However in Bulgaria the coexistence of both analogue and digital terrestrial TV broadcasting poses particular difficulties to the process of transition to DTTV Broadcasting:

- In view of use of said TV channels by the Ministry of Defence and in line with Paragraph 10 of Section 209 of the Law for Electronic Communications, stipulating for licensing of another DTTVB network for national coverage, it is considered that licensing of DTTVB networks with regional coverage shall be on hold for the time being.
- The dedication of Band 790-862 MHz for DD (Decision 2010/267/EC) implies that part of the DTTVB networks for national and regional coverage will not be deployed.



Committed to connecting the world

ITU Regional Seminar on Transition to DTTV Broadcasting and Digital Dividend in Europe

Actions taken

Three licenses have been granted to DTTVB operators for six DTTVB networks for national coverage, namely:

a) For the First phase of Plan 2008:

- Two commercial DTTVB networks; and
- One public service DTTVB network.

b) For the Second Phase of the Plan 2008:

- Three commercial DTTVB networks. The rights and duties of second phase DTTVB licensed operators shall enter in force only upon liberation of TV channels used for analogue TV broadcasting by relevant analogue licensees.



Committed to connecting the world

ITU Regional Seminar on Transition to DTTV Broadcasting and Digital Dividend in Europe

Laps, deadlines and conditions for deployment of DTTVB networks:

Lap One

A) DTTVB networks for nation-wide coverage:

- One of the DTTVB networks carrying commercial TV programmes licensed for nation-wide distribution should have reached 95% population coverage by 01 March 2013; and
- Other DTTVB network carrying commercial TV programmes for nation-wide distribution should have reached at least 85% population coverage by 01 September 2013.

B) DTTVB network for nation-wide distribution of TV Public Service Broadcasting programmes should have ensured 95% of the population coverage by **01 March 2013 – the date of start up of simulcast of both analogue and digital terrestrial TV broadcasting in this country.**



Committed to connecting the world

ITU Regional Seminar on Transition to DTTV Broadcasting and Digital Dividend in Europe

Laps, deadlines and conditions for deployment of DTTVB networks:

Lap Two

- A) DTTVB networks** carrying commercial TV programmes licensed for nation-wide distribution as defined by Electronic Communications Law (Section 5a Paragraph 1) – upon the date of release of frequencies being used by both the analogue TV broadcasting operators and the Ministry of Defense - latest by 9 months therein after shall ensure 65 % population coverage followed by second condition that further increase of population coverage to 85% shall be ensured within 18 months of the said date of frequency release.
- B) DTTVB network** carrying commercial TV programmes licensed for nation-wide distribution as defined by Electronic Communications Law (Section 209 Paragraph 10) – upon the date of release of frequencies being used by both the analogue TV broadcasting operators and the Ministry of Defense - latest by 9 months therein after shall ensure 65 % population coverage followed by second condition that further increase of population coverage to 85% shall be ensured within 18 months of the said date of frequency release.

Relevant details are published in Annex Two to the Plan.



Committed to connecting the world

ITU Regional Seminar on Transition to DTTV Broadcasting and Digital Dividend in Europe

The Electronic Media Council, defined by the Law for Radio and Television, has identified the following «must carry» TV programmes for nation-wide delivery:

- BTV;
 - Nova Television;
 - bTV Action;
 - TV 7;
 - Bulgaria on Air;
 - Darik Radio and Television; and
 - News 7.
- Furthermore, both the BTV Media Group and Nova Broadcasting Group are obliged to provide additional two «must carry» TV programmes to licensed DTTVB operators for distribution over DTTVB networks (as per Section 37a, Paragraph 2 of the Law for Radio and Television).



Committed to connecting the world

ITU Regional Seminar on Transition to DTTV Broadcasting and Digital Dividend in Europe

Prices for delivery of TV programmes over DTTVB networks and Law requirements

TV programme providers and the DTTVB network operators shall mutually agree on the price for relevant DTTVB delivery services at reasonable cost. In case of disagreement the relevant Regulatory Authorities, namely Council for Electronic Media and the Communications Regulatory Commission, shall intervene as per their mandates stipulated in the Law.

The «simulcast duration» was limited between 3 and 8 months by the Law.

The payment for DTTVB services is due upon completion of ASO in the whole country.

As stipulated in the Law, prevailing horizontal polarization in analogue TV broadcasting networks was to be replaced by vertical polarization for DTTVB networks between the months of May and October, thus facilitating replacement of outdoor end-user reception antennae. The shift to vertical polarization was to be gradual and in phases. The time table of said shift was to be defined by the Body on Digital Television integrating the interests of all relevant stakeholders as stipulated by the Law. Its secretariat function is provided by the MTITC.



Committed to connecting the world

ITU Regional Seminar on Transition to DTTV Broadcasting and Digital Dividend in Europe

Law requirements continued

By the ASO on 01 September 2013, the MPEG-4 standard (ITU-T Rec. H.264/AVC) was to be embedded in **every STB and integrated TV receiver on sale**. Market supply in abundance of DTTVB reception terminals was to be provided to the population.

Low income citizens and households, entitled to energy subsidy and in possession of working analogue TV receiver, **were to be provided with single STB at no cost**. In areas without DTTVB coverage alternative **digital satellite or cable reception decoders** were to be provided also at no cost as appropriate.

Note: More than 40 % of households in this country are recognized to fall into poverty category. For them the free-to-air delivery of TV programmes over DTTVB networks is the only affordable way permitting to continue watching television broadcasts. The «graceful degradation» of preceding analogue TTV broadcasts was allowing reception of signals predominantly with reduced picture quality. It also allowed analogue TTV reception beyond national borders. «Fall of the cliff» effect of DTTV broadcasting does not permit at all similar reception, hence the offer for alternative delivery of non-encrypted TV programmes via cable or satellite, but at subscription fee charged monthly.



Committed to connecting the world

ITU Regional Seminar on Transition to DTTV Broadcasting and Digital Dividend in Europe

Law requirements continued

It was up to DTTV broadcasting network license applicants to propose transmission parameters to the regulatory authority CRC.

The license holders selected by CRC have chosen the following **MPEG-4 transmission parameters**:

- Bandwidth - 8 MHz;
- Transmission Mode (FFT size) – 8 k;
- Guard Interval Duration – 1/4;
- Forward Error Correction (FEC) – 2/3;
- Carrier Modulation – 64 QAM;
- Percentage of Reception Points Successful Reception – 95%; and
- Bit Rate - 19.91 Mbit/sec.



Committed to connecting the world

ITU Regional Seminar on Transition to DTTV Broadcasting and Digital Dividend in Europe

Law requirements continued

As stipulated by the Law, substantial campaign has been launched on the DTTV Broadcasting switch-over providing information about ways and means to access the DTTV platform on national public service television broadcasts, 5 regional newspapers and 6 national magazines. It was intended to reach also low-income, elderly, and disabled viewers who have been impacted by the recent analogue switch-off.

The advertisement campaign, worth around BGN 833,333 (€ 425,000) lasted until 15 December 2013.

According to the broadcast network operator NURTS, approximately 100 000 viewers from 393 settlements in rural areas do not have access to the DTTV platform.



Committed to connecting the world

ITU Regional Seminar on Transition to DTTV Broadcasting and Digital Dividend in Europe

Thank you very much for your interest in reading this presentation!

Mr Petko Kantchev
Adviser,
MTITC, Bulgaria, Republic of
petko.kantchev@ties.itu.int



Committed to connecting the world