2016 – Digital Terrestrial Television transition in Romania

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History

- **Geneva 2006** – Regional Radiocommunication Conference for planning of Digital Terrestrial Television RRC06 – Romania: **6 MUX-es** in UHF (470 – 862 MHz) and **1 MUX** in VHF, in DVB-T standard,

- **Geneva 2012** – World Radiocommunication Conference – allocation of **790-862 MHz** Band to terrestrial mobile services on primary basis – **Digital Dividend 1 (DD1)**

- **17 iunie 2015** – switch-off of Analogue terrestrial TV in UHF in Romania. In VHF TVA stations will transmit until **31 decembrie 2016**.

- **Geneva 2015** - World Radiocommunication Conference – allocation of **694-790 MHz** Band to terrestrial mobile services on primary basis – **Digital Dividend 2 (DD2)**
ANCOM – Approaches and Actions

- Legislative measures after WRC 2012
- Technical measures and frequencies international coordination
- Spectrum auctions for the DTT MUX-es
- Technical Authorization of the transmitters.
Legislative measures

The Strategy regarding the transition from analogue terrestrial television to digital terrestrial television and implementation of multimedia digital services at national level – HG nr. 403/19.06.2013 officially published in 03.07.2013

Provisions:
- Television system: DVB-T2
- Number of multiplexes: 5 (4 in UHF band (21-48), 1 in VHF)
- 1 multiplex in UHF for public programs - free to air, coverage conditions (90% of population, 80% of territory till 31 December 2016)
- 4 commercial multiplexes without specific development conditions
- Switch – off date for analogue television: 17 June 2015.
- The date of entry in force of the multiplex licenses: 17 June 2015.
Technical approaches and frequencies
international coordination

Technical approaches:

• re-planning of DTT MUX-es in 470-694MHz Band in order to make available both DD1 and DD2 for mobile services

• redistribution of channels from GE-06 Plan and find new available channels, in order to obtain 4 national MUX-es

• redistribution of channels from GE-06 Plan and find new available channels, in order to obtain some regional MUX-es – 40 regional MUX-es

International coordination:

• the plan modifications were coordinate with neighboring countries by correspondence and bilateral meetings between 2013 – 2014
Spectrum auctions

- **March 2014 - June 2014** – auction for 5 national MUX-es for DTT (4 in UHF and 1 in VHF):
  - 3 National MUX-es in UHF – National Broadcasting Company (Radiocom)

- **November 2014 - February 2015** – auction for 40 regional MUX-es and 19 local MUX-es:
  - 9 regional MUX-es

- **March 2015 - May 2015** – auction for 31 de regional MUX-es and 19 local MUX-es
  - 4 regional MUX-es and 1 local MUX

Still available: 2 national MUX-es (1 in UHF, 1 in VHF), 27 regional MUX-es and several local MUX-es.
Technical Authorization

- ANCOM has awarded license for all the winners of the auctions for 10 years, until 2025

- The DVB-T2 features were implemented into the compatibility software in order to assess the interference of implemented transmitters (SFN or MFN) and estimate the coverage

- The License owner proposes the technical parameters of the assignments/SFN network and ANCOM, after the analysis, give the Technical Authorization for the assignment/network or impose modifications.
SFN implementation of ROU001 allotment
AUTORIZAȚIE DE ASIGNARE A FRECVENȚELOR RADIO
TDT/N101-2/2014

Titular: SOCIETATEA NATIONALA DE RADIOCOMUNICATII S.A.
Sediul: BUCUREȘTI, Sos. Oltenitei nr. 103, Sector 4,
Nr. Oficiul Registrului Comerțului: 340/7677/1998,
Cod de înregistrare fiscală: RO10881986,

I. Date generale:
1. Multiplexul: MUX1
2. LUF: TDT-MUX1/29.09.2014
3. Denumire alocare: ROU001
4. Canal: 30
5. Denumire stație: CERNAVODA

II. Caracteristici tehnice generale:
1. Sistemul de transmisie: DVB-T2
2. Tipul modulației: 256QAM
3. Rata de codare: 3/4
4. Număr purtătoare (FFT): 32k
5. Intervalul de gardă: 1/8
6. Matricea semnalelor pilot: PP2

III. Date amplasament emițător:
1. Adresă: Cernavoda, Str. Victoriei nr. 41, jud. Constanta
2. Coordonate geografice: 28°E02’24”; 44°N20’57”
3. Înălțimea antenei: 53 m
4. Hefmaxim: 145 m
5. Amplasare emițător în alocare:

IV. Parametri tehnici de emisie:
1. PARmaxim: 0,20 kW
2. Sistem radiant:
   a. Polarizare: H
   b. Tilt: 0°
   c. Directivitate: D
   d. Caracteristica de radiație în plan orizontal:

V. Mențiuni
1. Prin prezenta autorizație se stabilesc condițiile tehnice specifice în care se va realiza stația de emisie.

PREȘEDINTE
Marius Cătălin Marinescu

Data emiterii: 23.10.2014
Conclusions

- Romania is still in the process of development of Digital Terrestrial Television in DVB-T2 standard
- In Romania, the band of DD2 is already free for mobile services,
- ANCOM remain open and involved in the coordination process with neighboring countries in order to release the 694-862MHz Band in whole region for mobile services.
Thank you!

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