



AGENCY FOR ELECTRONIC COMMUNICATIONS  
AND POSTAL SERVICES OF MONTENEGRO

# **Transition to Digital Television Broadcasting in Montenegro**

# Legal framework

Provision of the broadcasting services in Montenegro has been regulated by the following legislation:

## ❑ Law on Electronic Media (2010, 2011)

Agency for Electronic Media (AEM) is authorised to award licences for provision of AVM services -programme licences for terrestrial including digital and non-terrestrial platforms, licences for the provision of on-demand AVM services

## ❑ Law on Digital Broadcasting (2011, 2012)

Method and conditions for implementation of digital terrestrial broadcasting in Montenegro, switchover period and other matters of importance in this field.

Provisions related to: network planning, status, rights and obligations of network operator and multiplex operator, provisions of funds for digital terrestrial broadcasting, switch-off date, rights and obligations during switchover period, supervision and other issues.

## ❑ Law on Electronic Communications (2013)

Management and use of electronic communications networks including broadcasting networks, inter alia allocation and use of radio-frequencies

Regulatory authorities :

- Agency for Electronic Communications and Postal Services (EKIP)
- Agency for Electronic Media (AEM)

# Radio-frequency planning and coordination – BROADCASTING SERVICES

Radio-frequency spectrum allocation plan in Montenegro (2014)

Radio-frequency plan for digital broadcasting services

REVISED IN 2014;

GE06 entries in the bands 174-230 MHz and 470-790 MHz:

- ☐ Plan for digital terrestrial television broadcasting (4-5 layers in the UHF and 1 layer in the VHF 3 allotment and 1 suballotment area)



Allotment area name	174 - 230 MHz (ch 5 - ch 12) BROADCASTING	470 - 694 MHz (ch 21 - ch 48) BROADCASTING	694 - 790 MHz (ch 49 - ch 60) BROADCASTING
BJELASICA	6	25, 29, 37, 43	60
LOVCEN	8	27, 31, 35	57
TVRDAS	6	22, 26, 32, 46	49, 53, 55
PODGORICA		21, 24, 30, 33, 38, 39, 44	53

# Current plans and use of radio-frequency band 470-694 MHz

## DVB-T2, MUX1 implementation

MUX1, national coverage: 2 PBS, 3 commercial programmes

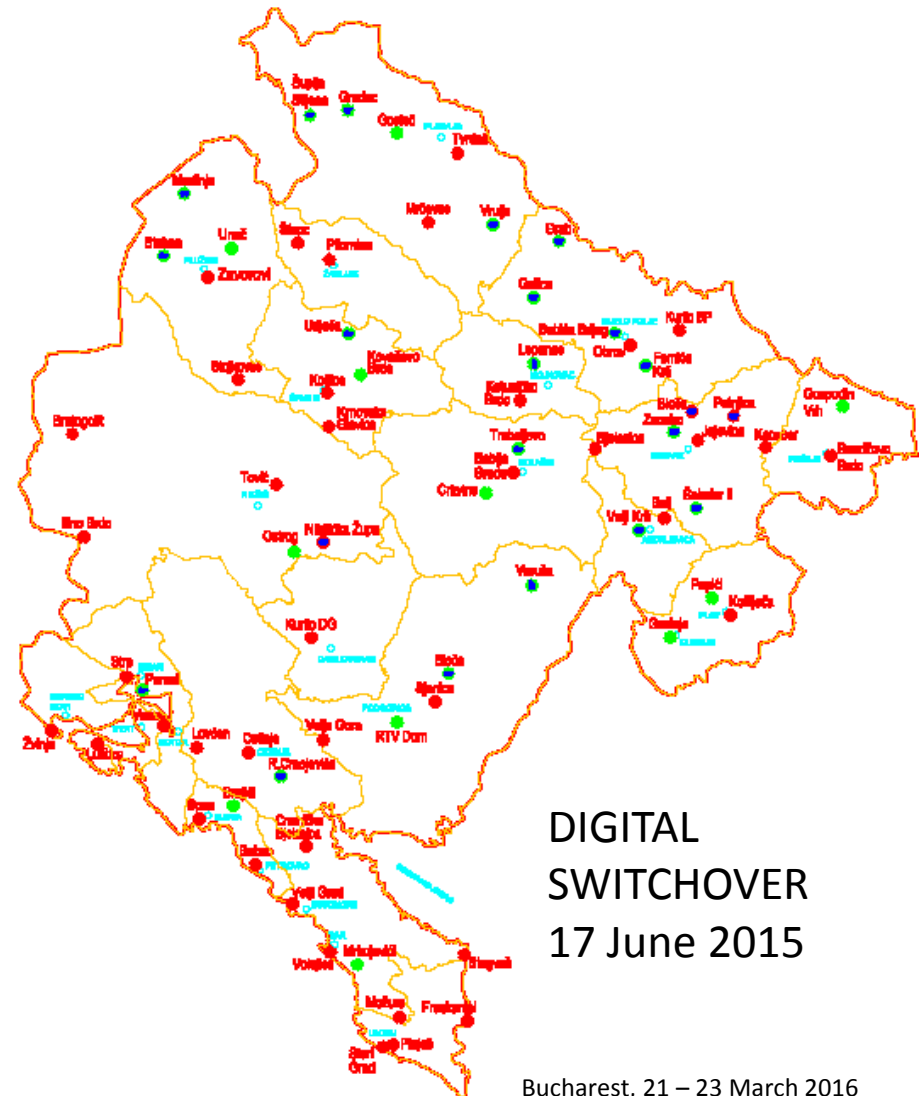
MUX2, local coverages: 3 LPBS, commercial programmes

Operator: The Broadcasting Center Ltd

Second operator of MUX2 local coverage has started to operate recently .

DVB-T2 network implemented with compression MPEG-4 according to standard ITU-T H.264/AVC

Network parameters (MUX1)	
Compression st.	MPEG-4 (H.264/AVC)
Bandwidth	8 MHz
FFT Size	32K
Guard interval	1/16
Network type	SFN
Pilot Pattern	PP2
Type of reception	Stacionary
Modulation	256-QAM
Antena mode	SISO
Code Rate	3/5
PLP mode	Single
Frequency mode	Normal
Network bit rate	31.1 Mbit/s



Bucharest, 21 – 23 March 2016

# Current plans and use of radio-frequency band 790-862 MHz

Not used for the implementation of DVB-T2 networks

## **PREPARATION OF THE PUBLIC BIDDING PROCEDURE (AUCTION)**

for awarding the approvals for the use of available radio-frequencies  
in the bands 800 MHz, 900 MHz, 1800 MHz, 2 GHz and 2.6 GHz  
for the implementation of a public mobile electronic communication networks  
by means of electronic spectrum auction  
in CCA format

# Current plans and use of radio-frequency band 694-790 MHz

Radio-frequency allocation plan 2014:  
694-790 MHz: BROADCASTING, Mobile

There is national Radio-frequency assignment plan 2014:  
694-790 MHz assigned for DVB-T2

WRC-15 allocation for MOBILE

- Radio-frequency allocation plan
- Radio-frequency assignment plan  
will be revised after WRC-15

Generally, in Montenegro the band 694-790 MHz has been avoided for the implementation of DVB-T2 networks (only ch 49 is used for AA Tvrđas, MUX1) Agency has already undertaken steps and started negotiations with MUX operator to realise this channel.

# Current plans and use of radio-frequency band 470-694 MHz

Coordinated optimization of the remaining spectrum in the band 470-694 MHz (taking into account WRC-15) for the broadcasting services is required!

Preferred coordination method

- Multilateral groups
- Bilateral** groups

**South European Digital Dividend Implementation Forum  
(SEDDIF)**

**ALB, AUT, BIH, BUL, HNG, HRV, MNE, SRB, SVN**

# SEEDIF

In order to facilitate the optimization of the use of radio-frequency resources, administrations of Austria, Bulgaria, Croatia, Hungary, Montenegro, Serbia and Slovenia have decided to form a group whose name is Forum for the implementation of the digital dividend of South-Eastern Europe ( South East European Digital Dividend Implementation Forum - abbreviated SEDDIF).

SEDDIF task is to facilitate the re-planning, coordination, negotiation and modification of GE06 plan, transition and implementation of broadcasting services in the band 470-694 MHz.

The main objective of SEDDIF is to facilitate changes / additions to plans for digital terrestrial television, which are coordinated by the respective administrations and to optimize the use of the 470-694 MHz band for the implementation of DVB-T2 taking into account the digital dividend I and II.

There have been two SEEDIF meetings until now (September 2015 and February 2016) in which delegation of Montenegro participated.





# Thank you for your attention

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