

## **AGREEMENT**

### **on frequency coordination of digital terrestrial television (DTT) in the frequency band 470-694 MHz between Administration of Romania and Administration of the Republic of Serbia**

#### **Preamble**

#### **Article 1**

This document describes a bilateral coordination agreement between Administration of Romania and Administration of the Republic of Serbia (hereinafter: Agreement). Furthermore, it expresses in particular the convergence of will between both parties, indicating an intended common course of action.

#### **Background**

#### **Article 2**

In relation with decisions of the WRC-15 about usage of radio frequency band 694-790 MHz (allocation of this band on co-primary base to the Broadcasting and the Mobile Service) following provisions of the Decision (EU) 2017/899 of the European Parliament and of the Council of 17 May 2017 on the use of the 470-790 MHz frequency band in the Union (hereinafter: Decision (EU) 2017/899), Administration of Romania and Administration of the Republic of Serbia decided to perform the re-planning of the frequency band 470-694 MHz in order to enable future use digital terrestrial television (hereinafter: DTT) networks and to facilitate the re-farming of the frequency band 694-790 MHz for terrestrial systems capable of providing wireless broadband electronic communications services.

Administration of Romania and Administration of the Republic of Serbia decided to use commonly agreed principles as presented in Multilateral Framework Agreement between the administrations of Albania, Austria, Bosnia and Herzegovina, Bulgaria, Croatia, Greece, Former Yugoslav Republic of Macedonia, Hungary, Montenegro, Romania, Serbia, Slovenia, Turkey and Ukraine on the frequency plan for the future digital terrestrial television in the frequency band 470-694 MHz which shall be signed on 6th December 2017, in order to facilitate the re-planning process and achieve a compatible frequency plan between the concerned administrations within the defined geographical area of SEDDIF.

#### **Objectives**

#### **Article 3**

Administration of Romania and Administration of the Republic of Serbia successfully facilitated bilateral frequency coordination activities in order to implement the relevant broadcasting spectrum reallocation, with a view to:

- achieve mutual compatibility of the DTT spectrum resources to be used in the UHF band and avoid mutual harmful interference;
- facilitate any consequential modifications to the Geneva 2006 (hereinafter: GE06) Plan.

## Revision of the Agreement

### Article 8

With the consent of the other signing Administration, this Agreement may be modified at the request of one of the signatory Administration where such a modification becomes necessary in the light of administrative, regulatory or technical developments.

An Administration cannot withdraw unilaterally from this Agreement.

## Language of the Agreement

### Article 9

This Agreement exists in two original versions in English. Each Administration holds one original.

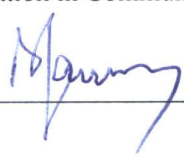
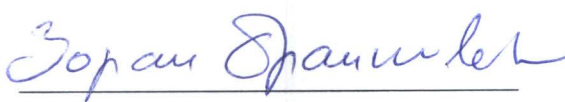
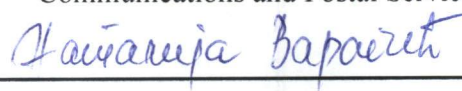
## Entry into force

### Article 10

This Agreement will enter into force on the date of the signature.

Budapest

Date 05 December 2017

For Administration of Romania	For Administration of the Republic of Serbia
<p><b>Bogdan Cristian IANA</b></p> <p>National Authority for Management and Regulation in Communications</p> <p></p>	<p><b>Zoran Branković</b></p> <p>Regulatory Agency for Electronic Communications and Postal Services</p> <p></p>
	<p><b>Natalija Varagić</b></p> <p>Regulatory Agency for Electronic Communications and Postal Services</p> <p></p>

Layer	AVALA	BESNA KOBILA	CER-MALIEN	COT-VENAC	DELI JOVAN	JASTREBAC	KIKINDA	KOPAONIK	RUDNIK-CRNI VRH(IJ)	SOMBOR	SUBOTICA	TORNIK-OVCAR	TUPIZNICA-CRNI VRH(P)	VRSAC	KOSOVO I METOHIJA	KOSOVO I METOHIJA C	KOSOVO I METOHIJA G
MUX1	22	35	39	24	43	25	24	34	43	24	24	39	25	25	21		
MUX2	28	39	32	30	23	27	30	32	26	43	43	36	22	31	31		
MUX3	33	29	34	34	29	45	46	22	29	34	46	30	31	33	46		
MUX4	37	33	37	40	39	33	40	41	46	40	40	41	37	37	48		
MUX5	45	43	47	41	41	42	29	24	47	39	29	24	28	45	44		
MUX6	42	38	42	48	24	38	32	28	35	48	48	23	44	42		47	37

GE06D channels

New channels

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*AB*

## Channel distribution of the new DTT Plan of Administration of Romania

Area/allotment name	ROU001	ROU002	ROU003	ROU004	ROU006	ROU007	ROU008	ROU009	ROU010	ROU014	ROU015
MUX 1	30	36	30	42	28	27	44	40	22	24	38
MUX 2	44	46	37	33	37	33	36	25	36	29	41
MUX 3	48	47	32	35	35	35	38	47	38	26	32
MUX 4	21	31	34	31	44	21	34	31	44	33	35
MUX 5	25	42	25	47	34	42	48	42	48	43	26
MUX 6	23					47					
MUX 7	37										

Area/allotment name	ROU020	ROU021	ROU022	ROU023	ROU024	ROU025	ROU028	ROU029	ROU030	ROU031	ROU032
MUX 1	37	21	21	44	30	26	26	39	43	31	38
MUX 2	30	39	39	25	36	33	30	41	25	28	41
MUX 3	26	35	35	27	31	22	27	35	44	35	21
MUX 4	33	47	47	48	43	42	48	45	34	45	42
MUX 5	28	27	28	45	24	29	24	46	36	46	37
MUX 6								29			

Area/allotment name	ROU033	ROU034	ROU035	ROU036	ROU039	ROU005 (Bucharest City)
MUX 1	40	32	30	21	38	23
MUX 2	34	25	23	37	25	29
MUX 3	46	26	35	47	32	43
MUX 4	48	43	39	28	21	
MUX 5	31	45	45	45	30	
MUX 6		44				

Channel from ROU GE-06 Plan  
New channel

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Station #	Site name	Adm	Allotment name	t_adm_ref_id	Geo coordinates	ERP [W]	Hant [m]	Heff [m]	Freq [MHz]	Channel No.	Pol
1	AVALA	SRB	AVALA	AVALA 5 new	20°31'12.0"E 44°41'47.0"N	200000	160	500	602	37	H
2	AVALA	SRB	AVALA	AVALA 6 new	20°31'12.0"E 44°41'47.0"N	200000	160	500	642	42	H
3	B VISNJICEVO	SRB	KIKINDA	B VISNJICEVO 2 new	20°40'45.0"E 45°26'59.0"N	10000	110	109	498	24	H
4	B VISNJICEVO	SRB	KIKINDA	B VISNJICEVO 3 new	20°40'45.0"E 45°26'59.0"N	10000	110	109	546	30	H
5	B VISNJICEVO	SRB	KIKINDA	B VISNJICEVO 5 new	20°40'45.0"E 45°26'59.0"N	10000	110	109	674	46	H
6	B VISNJICEVO	SRB	KIKINDA	B VISNJICEVO 7 new	20°40'45.0"E 45°26'59.0"N	10000	110	109	626	40	H
7	BAJINA BASTA	SRB	TORNIK-OVCAR	BAJINA BASTA 2 new	19°26'36.0"E 43°56'32.0"N	2000	30	835	546	30	H
8	BAJINA BASTA	SRB	TORNIK-OVCAR	BAJINA BASTA 3 new	19°26'36.0"E 43°56'32.0"N	2000	30	835	634	41	H
9	BAJINA BASTA	SRB	TORNIK-OVCAR	BAJINA BASTA 5 new	19°26'36.0"E 43°56'32.0"N	2000	30	835	498	24	H
10	BESNA KOBILA	SRB	BESNA KOBILA	BESNA KOBILA 2 new	22°14'05.0"E 42°31'44.0"N	50000	25	976	538	29	H
11	BESNA KOBILA	SRB	BESNA KOBILA	BESNA KOBILA 3 new	22°14'05.0"E 42°31'44.0"N	50000	25	976	570	33	H
12	BESNA KOBILA	SRB	BESNA KOBILA	BESNA KOBILA 5 new	22°14'05.0"E 42°31'44.0"N	50000	25	976	610	38	H
13	BITOVIK	SRB	TORNIK-OVCAR	BITOVIK 2 new	19°41'33.0"E 43°26'55.0"N	2000	25	892	546	30	H
14	BITOVIK	SRB	TORNIK-OVCAR	BITOVIK 3 new	19°41'33.0"E 43°26'55.0"N	2000	25	892	634	41	H
15	BITOVIK	SRB	TORNIK-OVCAR	BITOVIK 5 new	19°41'33.0"E 43°26'55.0"N	2000	25	892	498	24	H
16	CER	SRB	CER-MALJEN	CER 5 new	19°29'54.0"E 44°36'12.0"N	10000	51	616	618	39	H
17	CRNI VRH J	SRB	RUDNIK-CRNI VRH(J	CRNI VRH J 4 new	21°06'58.0"E 44°00'35.0"N	100000	60	583	650	43	H
18	CRNI VRH J	SRB	RUDNIK-CRNI VRH(J	CRNI VRH J 5 new	21°06'58.0"E 44°00'35.0"N	100000	60	583	682	47	H
19	CRVENI COT	SRB	COT-VENAC	CRVENI COT 5 new	19°42'30.0"E 45°09'06.0"N	200000	110	536	626	40	H
20	CRVENI COT	SRB	COT-VENAC	CRVENI COT 8 new	19°42'30.0"E 45°09'06.0"N	200000	110	536	578	34	H
21	CVILJEN	SRB	KOSOVO I METOHIJA	CVILJEN 6 new	20°44'54.0"E 42°10'20.0"N	10000	76	1091	682	47	H
22	DELI JOVAN	SRB	DELI JOVAN	DELI JOVAN 3 new	22°13'39.0"E 44°13'35.0"N	20000	60	888	538	29	H
23	DELI JOVAN	SRB	DELI JOVAN	DELI JOVAN 5 new	22°13'39.0"E 44°13'35.0"N	20000	60	888	618	39	H
24	GOC	SRB	JASTREBAC	GOC 5 new	20°52'42.0"E 43°33'45.0"N	5000	30	833	506	25	H
25	GOLES	SRB	KOSOVO I METOHIJA	GOLES 6 new	20°58'59.0"E 42°34'07.0"N	10000	90	560	602	37	H
26	GUCEVO	SRB	CER-MALJEN	GUCEVO 5 new	19°10'54.0"E 44°29'16.0"N	2000	25	679	618	39	H
27	JADOVNIK	SRB	TORNIK-OVCAR	JADOVNIK 2 new	19°49'52.0"E 43°16'08.0"N	5000	30	899	546	30	H
28	JADOVNIK	SRB	TORNIK-OVCAR	JADOVNIK 3 new	19°49'52.0"E 43°16'08.0"N	5000	30	899	634	41	H
29	JADOVNIK	SRB	TORNIK-OVCAR	JADOVNIK 5 new	19°49'52.0"E 43°16'08.0"N	5000	30	899	498	24	H
30	JASTREBAC	SRB	JASTREBAC	JASTREBAC 5 new	21°28'14.0"E 43°22'56.0"N	100000	40	1063	506	25	H
31	KIKINDA	SRB	KIKINDA	KIKINDA 2 new	20°27'08.0"E 45°51'42.0"N	100000	150	150	498	24	H
32	KIKINDA	SRB	KIKINDA	KIKINDA 3 new	20°27'08.0"E 45°51'42.0"N	100000	150	150	546	30	H
33	KIKINDA	SRB	KIKINDA	KIKINDA 5 new	20°27'08.0"E 45°51'42.0"N	100000	150	150	674	46	H
34	KIKINDA	SRB	KIKINDA	KIKINDA 7 new	20°27'08.0"E 45°51'42.0"N	100000	150	150	626	40	H
35	KLADOVO	SRB	DELI JOVAN	KLADOVO 3 new	22°30'55.0"E 44°39'21.0"N	2000	25	408	538	29	H
36	KLADOVO	SRB	DELI JOVAN	KLADOVO 5 new	22°30'55.0"E 44°39'21.0"N	2000	25	408	618	39	H
37	KOSMAJ	SRB	AVALA	KOSMAJ 5 new	20°34'58.0"E 44°28'34.0"N	2000	20	386	602	37	H
38	KOSMAJ	SRB	AVALA	KOSMAJ 6 new	20°34'58.0"E 44°28'34.0"N	2000	20	386	642	42	H
39	KRUPANJ JAGODNJA	SRB	CER-MALJEN	KRUPANJ JAGODNJA 5n	19°17'51.0"E 44°20'34.0"N	500	25	644	618	39	H
40	LJUBOVIJA NEMIC	SRB	CER-MALJEN	LJUBOVIJA NEMIC 5 n	19°26'02.0"E 44°10'42.0"N	500	35	611	618	39	H

## Technical parameters of assignments of Administration of Romania

No.	Channel	Site name	Longitude	Latitude	E.R.P. max. (dBW)	Pol.	Hef. max (m)	Allotment
1	23	CONSTANTA LITORAL	283725	440212	45.0	H	205	ROU001
2	23	MANGALIA	283452	434839	34.6	H	128	ROU001
3	37	CONSTANTA LITORAL	283725	440212	45.0	H	205	ROU001
4	37	MANGALIA	283452	434839	34.6	H	128	ROU001
5	42	BANEASA CALARASI	274508	440300	44.4	H	280	ROU002
6	25	BUCURESTI CNCR	260727	442339	42.0	H	168	ROU003
7	25	BUCURESTI HERASTRAU	260302	442837	47.5	H	116	ROU003
8	25	GIURGIU	255848	435359	35.3	H	42	ROU003
9	25	OLTENITA HOTARELE	262235	440945	42.2	H	130	ROU003
10	35	CRAIOVA SIMNIC	234927	442205	40.1	H	169	ROU006
11	35	DABULENI	240502	434808	23.0	H	73	ROU006
12	47	BALOTA TURNUSEVERIN	224910	443601	44.0	H	506	ROU009
13	47	HERCULANE	222339	445056	31.7	H	322	ROU009
14	42	BALOTA TURNUSEVERIN	224910	443601	44.0	H	506	ROU009
15	42	HERCULANE	222339	445056	31.7	H	322	ROU009
16	44	CERBU NOVACI	234207	451504	43.0	H	1111	ROU010
17	44	PARANG PETROSANI	232815	452304	42.3	H	1096	ROU010
18	48	CERBU NOVACI	234207	451504	43.0	H	1111	ROU010
19	48	PARANG PETROSANI	232815	452304	42.3	H	1096	ROU010
20	26	MAHMUDIA	290418	450514	37.8	H	251	ROU015
21	26	TOPOLOG	282515	445126	44.7	H	353	ROU015
22	26	TULCEA	284708	450940	39.3	H	187	ROU015
23	37	FAGET-COSEVITA	222323	455244	38.5	H	216	ROU020
24	37	HATEG	225528	453223	29.2	H	223	ROU020
25	37	ZAM	222648	455842	26.5	H	234	ROU020
26	35	TIMISOARA	211519	454316	50.0	H	207	ROU021
27	35	TIMISOARA-SEDIU DR	211344	454552	35.8	H	128	ROU021
28	28	ARAD RR	211911	461047	28.3	H	64	ROU022
29	28	ARAD SIRIA	213949	461554	48.0	H	481	ROU022
30	28	LIPOVA	214253	460557	18.5	H	120	ROU022
31	30	BIHOR-VASCAU	224117	462629	26.0	H	1323	ROU024
32	31	BIHOR-VASCAU	224117	462629	35.0	H	1323	ROU024
33	24	BIHOR-VASCAU	224117	462629	30.0	H	1323	ROU024
34	22	CLUJ-FELEAC	233832	464252	45.5	H	628	ROU025
35	29	CLUJ-FELEAC	233832	464252	45.5	H	628	ROU025
36	24	PIATRA NEAMT	262248	465544	41.8	H	318	ROU028
37	29	PIATRA NEAMT	262248	465544	41.8	H	318	ROU028
38	46	BACAU	265546	463619	46.7	H	187	ROU029
39	46	BARLAD	275104	461429	46.4	H	401	ROU029
40	46	BARLAD TRTV	274052	461104	36.8	H	176	ROU029
41	46	HUSI	280109	463949	24.3	H	385	ROU029
42	46	MOSNA	275757	465530	23.4	H	183	ROU029
43	46	NEGRESTI	272827	465052	28.0	H	188	ROU029
44	46	VASLUI	274721	464015	46.3	H	281	ROU029