



AKOS

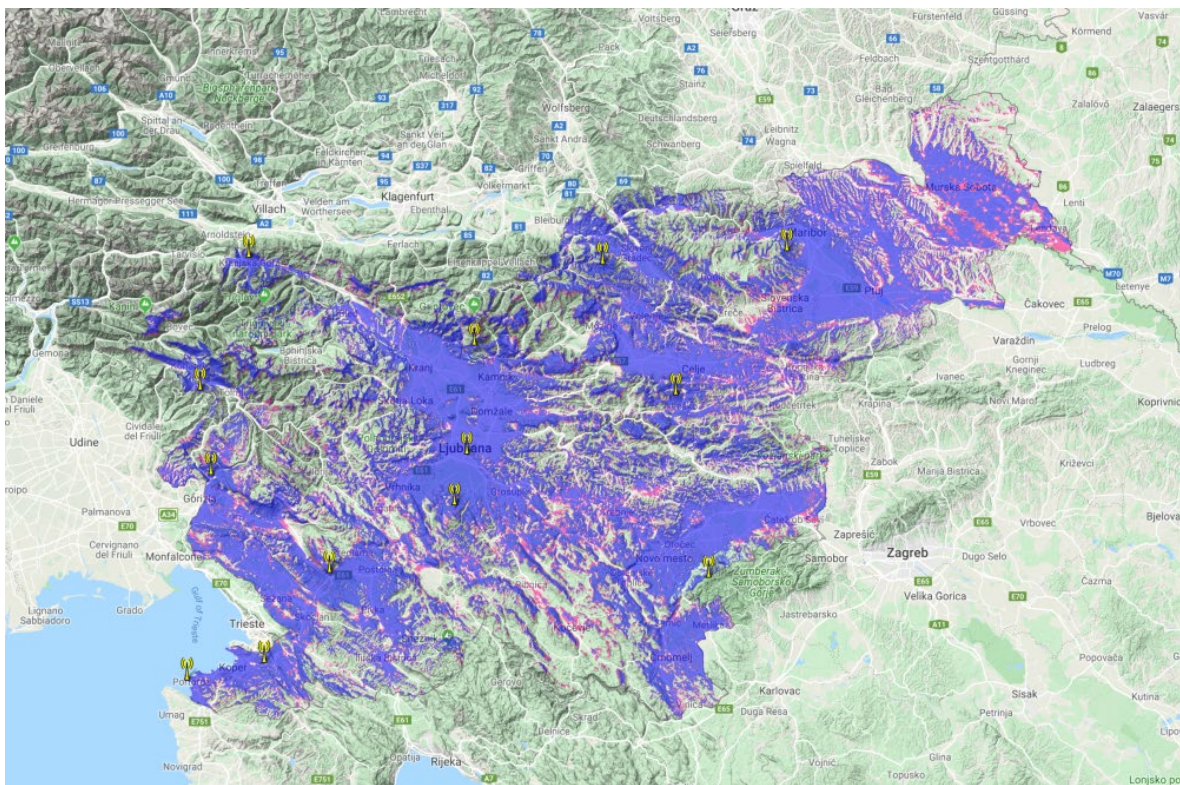
DAB in Slovenia

WorldDAB General Assembly 2019



- FM radio stays, DAB platform as additional capacity
- September 2016 – start of first DAB network in Slovenia
 - Public tender for network operator
 - Public tender for content provides
- National coverage, one SFN network, 7 transmitters
- Initially covered
 - all major highways
 - 60% of population

Coverage: 85% of population, 94% of highways



- 19 radio stations
- Bitrate from 24 kbit/s mono (12 CUs) to 128 kbit/s stereo (96 CUs)
- Some stations use EEP 4A protection level

	Label	SID	CU	Protection	Bit Rate	Mode	Codec	Sampling
1	Slo 1 Prvi	9201	96	EEP 3A	128 kbit/s	STEREO	HE-AAC	48 kHz
2	Slo 2 Val 202	9202	96	EEP 3A	128 kbit/s	STEREO	HE-AAC	48 kHz
3	Slo 3 ARS	9203	96	EEP 3A	128 kbit/s	STEREO	HE-AAC	48 kHz
4	Radio Si	933A	96	EEP 3A	128 kbit/s	STEREO	HE-AAC	48 kHz
5	Center Slo	9414	54	EEP 3A	72 kbit/s	STEREO	HE-AAC	48 kHz
6	Rock Radio Slo	9516	60	EEP 3A	80 kbit/s	STEREO	HE-AAC	48 kHz
7	Radio Ognjisce	932F	36	EEP 3A	48 kbit/s	STEREO	HE-AAC v2	48 kHz
8	Radio 1 DAB	9442	24	EEP 4A	48 kbit/s	STEREO	HE-AAC	48 kHz
9	Radio 2	9459	12	EEP 4A	24 kbit/s	MONO	HE-AAC	32 kHz
10	Radio Antena	940B	12	EEP 4A	24 kbit/s	MONO	HE-AAC	32 kHz
11	Radio BOB	945B	12	EEP 4A	24 kbit/s	MONO	HE-AAC	32 kHz
12	Radio City	9415	54	EEP 3A	72 kbit/s	STEREO	HE-AAC	48 kHz
13	Radio Student	9440	18	EEP 3A	24 kbit/s	MONO	HE-AAC	32 kHz
14	A-Radio	9463	12	EEP 4A	24 kbit/s	MONO	HE-AAC	32 kHz
15	Radio Veseljak	9449	36	EEP 3A	48 kbit/s	STEREO	HE-AAC	48 kHz
16	Radio Net FM	942B	42	EEP 3A	56 kbit/s	STEREO	HE-AAC	48 kHz
17	Radio Maxi	9428	12	EEP 4A	24 kbit/s	MONO	HE-AAC	32 kHz
18	Ekspres Slo	9462	36	EEP 3A	48 kbit/s	STEREO	HE-AAC v2	48 kHz
19	Radio Aktual	941C	42	EEP 3A	56 kbit/s	STEREO	HE-AAC	48 kHz

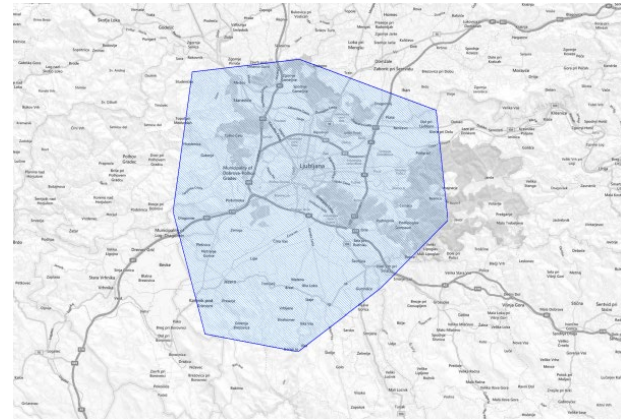
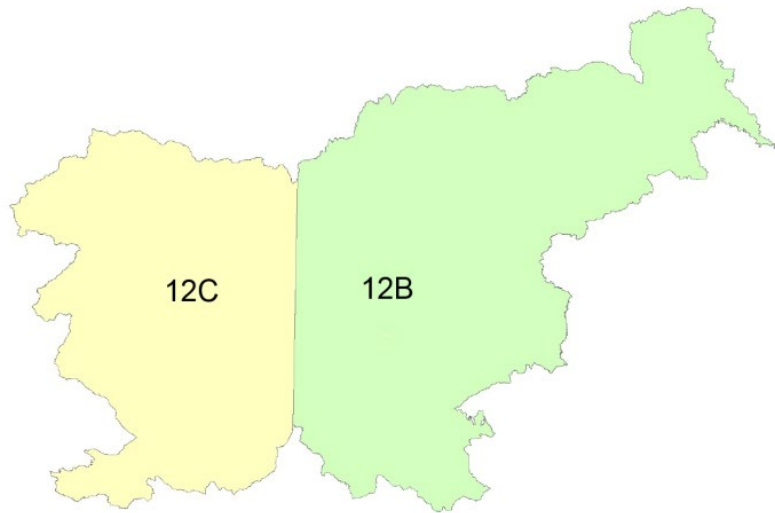


No free Capacity Unit!

ID	CU	CU percentage	Label
0	96	11.11 %	Slo 1 Prvi
1	96	11.11 %	Slo 2 Val 202
2	96	11.11 %	Slo 3 ARS
3	96	11.11 %	Radio Si
5	60	6.94 %	Rock Radio Slo
4	54	6.25 %	Center Slo
11	54	6.25 %	Radio City
15	42	4.86 %	Radio Net FM
18	42	4.86 %	Radio Aktual
6	36	4.17 %	Radio Ognjisce
14	36	4.17 %	Radio Veseljak
17	36	4.17 %	Ekspres Slo
7	24	2.78 %	Radio 1 DAB
12	18	2.08 %	Radio Student
8	12	1.39 %	Radio 2
9	12	1.39 %	Radio Antena
10	12	1.39 %	Radio BOB
13	12	1.39 %	A-Radio
16	12	1.39 %	Radio Maxi
22	12	1.39 %	
21	6	0.69 %	



- Public tenders for network operators for two new networks:
 - National coverage – 2 allotments (regional stations)
 - Local coverage (Ljubljana)





- At least 40 kbit/s mono or 56 kbit/s stereo
- At least protection level 3
- Considering to later impose higher requirements also for R1 network
- Coordination activities for additional layers

- Receiver penetration estimated at 15%
- New Electronic communication act will require all new car radios to be capable of receiving digital terrestrial radio
- Issues with existing car radios without DAB+ support
- Adapters are available but they can't offer good user experience
- Most car radios can't be upgraded to have DAB+ support
- Few exceptions - Audi

Thank you for your attention!

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