

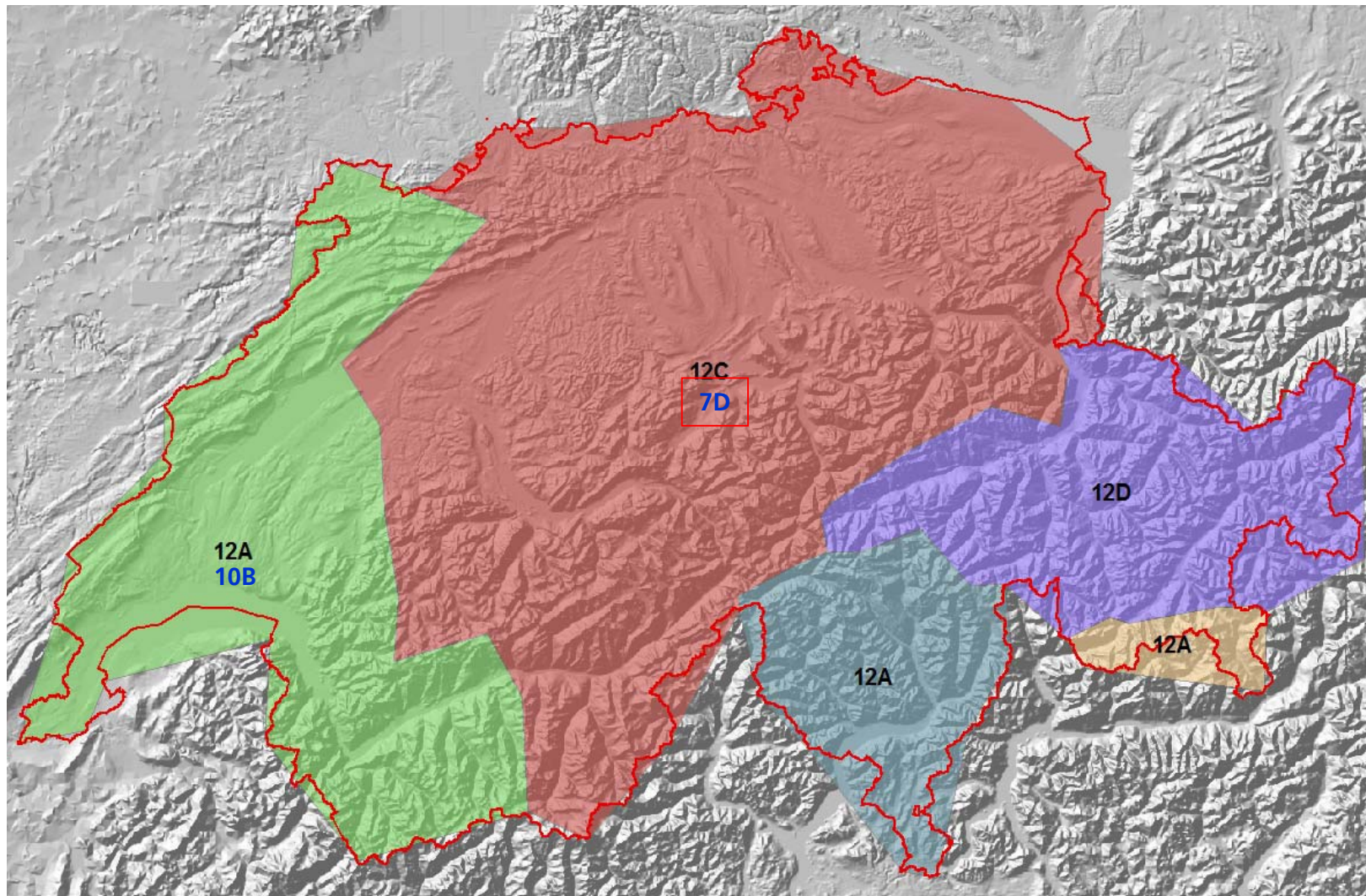


SRG SSR idée suisse

Receiver Profiles and Broadcast Services

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Swiss DAB/DAB+ Topology



Timetable for the introduction of DAB/DAB+ in Switzerland

- German Speaking Region and Bassin Lémanique, mob 2000
- Italian Speaking Region, indoor (12A) 2005
- Relaunch German Speaking Region, indoor (12C) 2006
- Relaunch French Speaking Region, indoor (12A) 2007









BAKOM DAB+ Decision

- End of 2007 new tender for a second layer in the German Speaking Region in DAB+
- SRG SSR asked by BAKOM to plan a transition for the first layer from DAB to DAB+
- Beginning of 2008 SRG SSR decides to realise the last allotment of the first layer (12D) in DAB+
- October 2008 switch-on of the first regular DAB+ Allotment 12D in the Grisons
- February 2009 SRG SSR decides on a DAB – DAB+ Migration of first layer

Timetable for the introduction of DAB/DAB+ in Switzerland (cont.)

- Grisons, indoor (12D DAB+) 2008
- Second Layer German Speaking Region (7D DAB+) Q4 2009
- First Layer German Speaking Region (12C DAB/DAB+) Q4 2009
- First Layer French Speaking Region (12A DAB/DAB+) Q4 2009
- First Layer Italian Speaking Region (12A DAB/DAB+) Q4 2009
- Second Layer French Speaking Region (10B DAB+) 2010

Program Ensemble Italian Speaking Region

Programmlogo	Programm-Name	Programm-ID	Audio-Mode	Übertragungsart
	RETE UNO	43E1	j-stereo	DAB
	RETE DUE	43E2	stereo	DAB
	RETE TRE	43E3	j-stereo	DAB
	CH-POP	42F1	j-stereo	DAB
	CH-CLASSICA	42F2	j-stereo	DAB
	CH-JAZZ	42F3	j-stereo	DAB
	DRS MUSIKWELLE	43B4	j-stereo	DAB
	OPTION MUSIQUE	43D4	j-stereo	DAB
	WRS	43D5	mono	DAB
	RR SRG	43A1	mono	DAB

Program Ensemble French Speaking Region

Programmlogo	Programm-Name	Programm-ID	Audio-Mode	Übertragungsart
	RSR-1ERE	43D1	j-stereo	DAB
	ESPACE 2	43D2	stereo	DAB
	COULEUR 3	43D3	j-stereo	DAB
	OPTION MUSIQUE	43D4	j-stereo	DAB
	WRS	43D5	j-stereo	DAB
	CH-POP	42F1	j-stereo	DAB
	CH-CLASSIQUE	43F4	j-stereo	DAB
	CH-JAZZ	42F3	j-stereo	DAB
	DRS 1	44B1	mono	DAB
	RETE UNO	43E1	mono	DAB
	RR SRG	43A1	mono	DAB

Program Ensemble Grisons

Programmlogo	Programm-Name	Programm-ID	Audio-Mode	Übertragungsart
	DRS 1 ⁺	43B9	stereo	DAB ⁺
	DRS 2 ⁺	43BA	stereo	DAB ⁺
	DRS 3 ⁺	43BB	stereo	DAB ⁺
	DRS MUSIKWELLE ⁺	43BC	stereo	DAB ⁺
	VIRUS ⁺	43BD	stereo	DAB ⁺
	DRS 4 News ⁺	43BE	stereo	DAB ⁺
	CH-POP ⁺	42F9	stereo	DAB ⁺
	CH-CLASSIC ⁺	42FA	stereo	DAB ⁺
	CH-JAZZ ⁺	42FB	stereo	DAB ⁺
	RSR-1ERE ⁺	43D9	stereo	DAB ⁺
	RETE UNO ⁺	43E9	stereo	DAB ⁺
	RR SRG ⁺	43A9	stereo	DAB ⁺
	WRS ⁺	43DD	stereo	DAB ⁺
	RR SRG	43A1	mono	DAB
	DRS MUSIKWELLE	43B4	mono	DAB

Ensemble Grisons 2009

Programm	Audio [kb/s]	Data [kb/s]	PL	CU
Radio Rumantsch	56	0	4	35
DRS Musikwelle	56	0	4	35
DRS Virus	72	8	3	60
DRS 1 D-Bünden	72	8	3	60
DRS 2	88	8	3	72
DRS 3	72	8	3	60
DRS 4 News	64	8	3	54
DRS Musikwelle	72	8	3	60
Swiss Classic	88	8	3	72
Swiss Jazz	72	8	3	60
Swiss Pop	72	8	3	60
La Première	72	0	3	54
Rete Uno	72	0	3	54
Radio Rumantsch	72	16	3	66
WRS	64	0	3	48
EPG		8	3	6
TPEG		4	3	3
				859

	DAB
	DAB Mono
	DAB+
	DAB+ Mono

Profile 1 and 2

Migration DAB -> DAB+

Jahr	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
1. Layer										
DRS 1	DAB	DAB	DAB	DAB	DAB	DAB Mono	DAB Mono	DAB Mono		
DRS 1						DAB+	DAB+	DAB+	DAB+	DAB+
DRS 2	DAB	DAB	DAB	DAB	DAB					
DRS 2						DAB+	DAB+	DAB+	DAB+	DAB+
DRS 3	DAB	DAB	DAB	DAB	DAB					
DRS 3						DAB+	DAB+	DAB+	DAB+	DAB+
DRS Musikwelle	DAB	DAB	DAB	DAB	DAB	DAB Mono	DAB Mono	DAB Mono		
DRS Musikwelle						DAB+	DAB+	DAB+	DAB+	DAB+
DRS 4 News	DAB Mono	DAB Mono	DAB Mono	DAB Mono	DAB Mono	DAB Mono	DAB Mono	DAB Mono		
DRS 4 News						DAB+	DAB+	DAB+	DAB+	DAB+
DRS Virus	DAB	DAB	DAB	DAB	DAB					
DRS Virus						DAB+	DAB+	DAB+	DAB+	DAB+
Radio Rumantsch	DAB Mono	DAB Mono	DAB Mono	DAB Mono	DAB Mono					
Radio Rumantsch						DAB+	DAB+	DAB+	DAB+	DAB+
Swiss Classic	DAB	DAB	DAB	DAB	DAB					
Swiss Classic						DAB+	DAB+	DAB+	DAB+	DAB+
Swiss Jazz	DAB	DAB	DAB	DAB	DAB					
Swiss Jazz						DAB+	DAB+	DAB+	DAB+	DAB+
Swiss Pop	DAB	DAB	DAB	DAB	DAB					
Swiss Pop						DAB+	DAB+	DAB+	DAB+	DAB+
La Première	DAB Mono	DAB Mono	DAB+ Mono	DAB+ Mono	DAB+ Mono					
Rete Uno	DAB Mono	DAB Mono	DAB+ Mono	DAB+ Mono	DAB+ Mono					
WRS			DAB+ Mono	DAB+ Mono	DAB+ Mono					

DAB	
DAB Mono	
DAB+	
DAB+ Mono	

SRG SSR 5.2.2009 (Änderungen vorbehalten)

Ensemble German Speaking Region 2009

Program	Audio [kb/s]	Data [kb/s]	PL	CU
DRS1	120	8	4	84
DRS2	152	8	4	104
DRS3	120	8	4	84
DRS Musikwelle	120	8	3	100
DRS4News	56	0	3	42
DRS Virus	120	8	3	100
Radio Rumantsch	56	0	4	35
Swiss Classic	120	8	4	84
Swiss Jazz	104	8	4	70
Swiss Pop	120	8	4	84
La Première	56	0	4	35
Rete uno	56	0	4	35
EPG		0	3	0
TPEG		0	3	0
				857

	DAB
	DAB Mono
	DAB+
	DAB+ Mono

Profile 1 and 2

Ensemble German Speaking Region 2010

Programm	Audio [kb/s]	Daten [kb/s]	PL	CU
DRS1	120	8	4	84
DRS2	152	8	4	104
DRS3	120	8	4	84
DRS Musikwelle	120	8	3	100
DRS4News	56	0	3	42
DRS Virus	120	8	3	100
Radio Rumantsch	56	0	4	35
Swiss Classic	120	8	4	84
Swiss Jazz	104	8	4	70
Swiss Pop	120	8	4	84
La Première	32	0	3A	24
Rete uno	32	0	3A	24
WRS	32	0	3A	24
EPG		0	3	0
TPEG		4	3	3
				862

	DAB
	DAB Mono
	DAB+
	DAB+ Mono

Profile 1 and 2

Ensemble German Speaking Region 2013

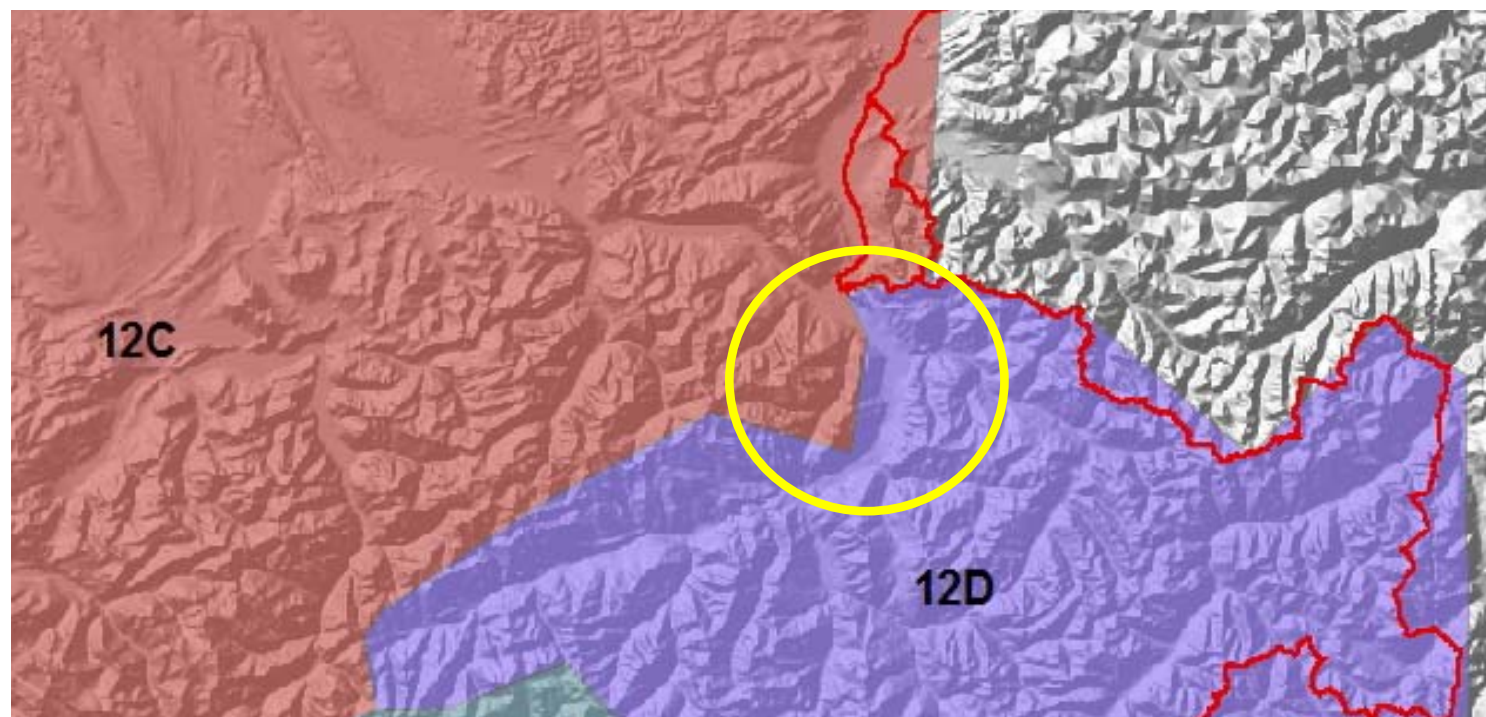
Programm	Audio [kb/s]	Daten [kb/s]	PL	CU
DRS1	56	0	4	35
DRS Musikwelle	56	0	4	35
DRS4News	56	0	4	35
Swiss Classic	88	0	3A	66
Swiss Jazz	72	0	3A	54
Swiss Pop	64	0	3A	48
DRS Virus	80	16	3A	72
DRS1	80	8	3A	66
DRS2	96	8	3A	78
DRS3	80	0	3A	60
DRS4News	64	16	3A	60
WRS	40	0	3A	30
DRS Musikwelle	80	8	3A	66
Radio Rumantsch	64	0	3A	48
La Première	64	0	3A	48
Rete Uno	64	0	3A	48
EPG		8	3A	6
TPEG		4	3A	3
				858

	DAB
	DAB Mono
	DAB+
	DAB+ Mono

Profile 1 and 2













Implementation Issues

Swiss DAB/DAB+ Hotspot



DAB/DAB+ Mixed MUX

DAB 12C

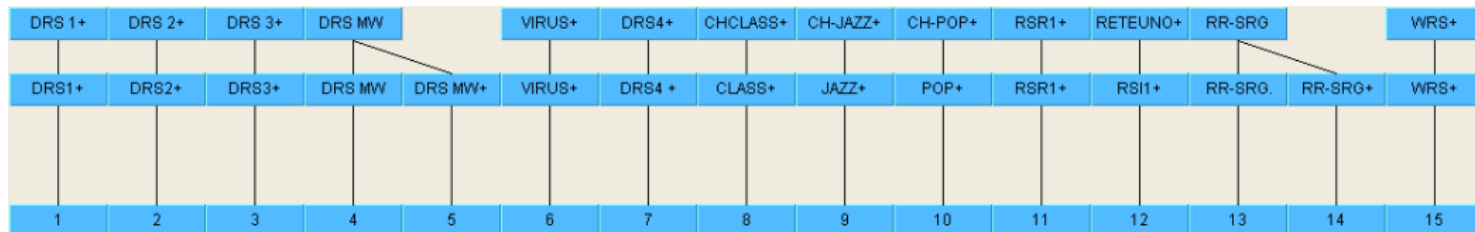
Programmlogo	Programm-Name	Programm-ID	Audio-Mode	Übertragungsart
	DRS 1	43B1	j-stereo	DAB
	DRS 2	43B2	stereo	DAB
	DRS 3	43B3	j-stereo	DAB
	DRS MUSIKWELLE	43B4	j-stereo	DAB
	VIRUS	43B5	j-stereo	DAB
	DRS 4 News	43B6	mono	DAB
	CH-POP	42F1	j-stereo	DAB
	CH-CLASSIC	42F2	j-stereo	DAB
	CH-JAZZ	42F3	j-stereo	DAB
	RSR-1ERE	43D1	mono	DAB
	RETE UNO	43E1	mono	DAB
	RR SRG	43A1	mono	DAB

DAB+ 12D

Programmlogo	Programm-Name	Programm-ID	Audio-Mode	Übertragungsart
	DRS 1 ⁺	43B9	stereo	DAB ⁺
	DRS 2 ⁺	43BA	stereo	DAB ⁺
	DRS 3 ⁺	43BB	stereo	DAB ⁺
	DRS MUSIKWELLE ⁺	43BC	stereo	DAB ⁺
	VIRUS ⁺	43BD	stereo	DAB ⁺
	DRS 4 News ⁺	43BE	stereo	DAB ⁺
	CH-POP ⁺	42F9	stereo	DAB ⁺
	CH-CLASSIC ⁺	42FA	stereo	DAB ⁺
	CH-JAZZ ⁺	42FB	stereo	DAB ⁺
	RSR-1ERE ⁺	43D9	stereo	DAB ⁺
	RETE UNO ⁺	43E9	stereo	DAB ⁺
	RR SRG ⁺	43A9	stereo	DAB ⁺
	WRS ⁺	43DD	stereo	DAB ⁺
	RR SRG	43A1	mono	DAB
	DRS MUSIKWELLE	43B4	mono	DAB

Results of configuration tests

- In the presence of the same programs in DAB and DAB+ (in the same ensemble or in different ensembles present at the same location) names for the DAB and DAB+ version have to be distinguishable.
- DAB and DAB+ version as primary and secondary service component doesn't work



- SId's for the DAB and DAB+ Version have to be different
-> Service following doesn't work with today's receivers, but should work with profile 1 receivers