

## QUESTIONNAIRE ON SPECTRUM REQUIREMENTS FOR TERRESTRIAL TELEVISION BROADCASTING IN CONNECTION WITH WRC-15 AGENDA ITEM 1.2

**Name of the Administration/Sector Member: Switzerland (Confederation of)**

**For sector members please indicate the geographical area over which you operate:**

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- 1
- a) What standards have you adopted for digital terrestrial television broadcasting?
  - b) Have you started introduction of digital terrestrial television services?
  - c) If yes, please provide further detail on the number of multiplexes in use, their technical specifications, the percentage of geographic area or population they are intended to cover and the total spectrum use to inform WP 6A.

A proposed format for detailed responses is provided in Annex 1.

**Reply:**

- a) DVB-T.
- b) Yes.
- c) See the table below:

Country	No of Multiplexes	System & Modulation	FEC	GI	Reception Mode	Capacity per multiplex (Mb/s)	Current Percentage Population Coverage	Intended Percentage Population Coverage	Content per Multiplex	Total Capacity (Mb/s)	Total Spectrum Bandwidth Used or intended for implementation (MHz)	Any additional comments (eg duration of licences)
SUI	1	DVB-T, 16-QAM	5/6	1/4	PO / FX	16.6	80%/ 98%	80%/ 98%	4 SD MPEG2	16.6	88	Public service (nationwide)
SUI	4	DVBT-T, 64-QAM	7/8	1/32	FX	31.7	70%	70%	9-10 SD MPEG2	126.8	64	Private services (local distribution)
SUI	2	DVBT-T, 64-QAM	3/4	1/16	FX	26.4	70%	70%	10-11 SD MPEG2	52.8	16-24 depending on the location	Private services (local distribution)

- 2 a) Have you commenced analogue television switch-off?  
b) If you have any such plans, when do you expect to have completed the analogue switch-off process?

**Reply:**

- a) Yes.  
b) The switch-off process is completed.

- 3 a) What is the percentage of viewer uptake of terrestrial television in your country, including those whose service provider uses terrestrial broadcast re-transmission (e.g. in cable networks)?  
b) If possible, please also provide details of the number or proportion of users who receive television primarily by terrestrial means.

**Reply:**

- a) ~5%.  
b) ~5%.

- 4 a) Indicate how many analogue television transmitters use channels in the frequency sub-band 694-790 MHz (as indicated in Resolution **232 (WRC-12)**).  
b) How many are in the remaining part of the UHF band..

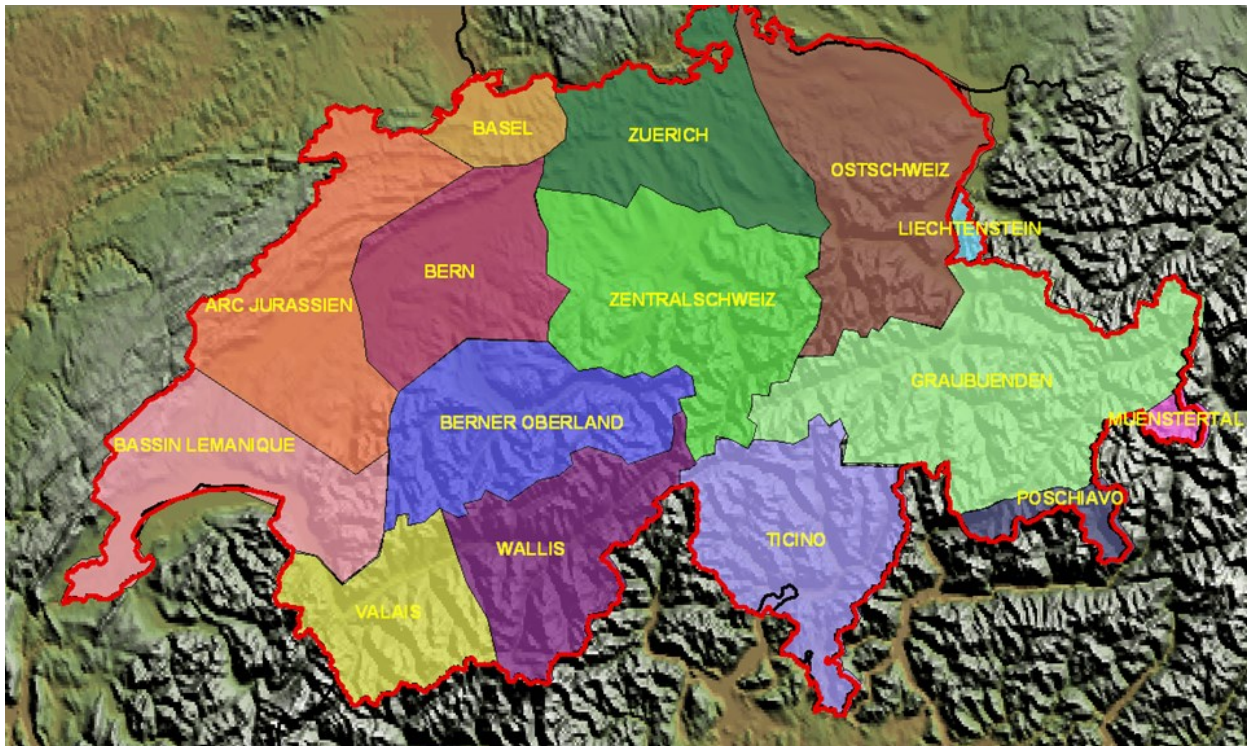
**Reply:**

- a) None.  
b) None.

- 5
- a) What frequencies/channels are currently used or intended to be used by digital terrestrial television broadcasting in your country? Please distinguish between those in use and those intended to be used.
  - b) If allotments/SFNs are in use, a sketch map of frequency allocations could be included, with an accompanying table of allocations, as shown in Annex 2. Otherwise, it might be possible to show main transmitters and channels, grouped in layers, in a table.
  - c) Please indicate how many digital television assignments/allotments use channels in the frequency sub-band 694-790 MHz (as indicated in Resolution **232 (WRC-12)**), and
  - d) How many are in the remaining part of the UHF band.

**Reply:**

a) b) c) d) see the figure and the table below:



Area	MUX1	MUX2	MUX3	MUX4	MUX5
Basel	31				
Zuerich	32				
Ostschweiz	34				
Graubunden	52	from 01.01.2014 1 channel	from 01.01.2014 1 channel		
Ticino	39				
Wallis	45	from 01.01.2014 2 channels	from 01.01.2014 2 channels	from 01.01.2014 2 channels	from 01.01.2014 2 channels
Valais	54				
Bassin Lemanique	34				
Arc Jurassien	56				
Bern	48				
Zentralschweiz	32				
Berner Oberland	49				
Muenstertal	52	from 01.01.2014 1 channel	from 01.01.2014 2 channels		
Poschiavo	24	from 01.01.2014 1 channel	from 01.01.2014 2 channels		

 470-694 MHz

 694-790 MHz

- 6 a) Are those frequency bands also shared with other primary services?  
b) If yes, please give details of those systems and their spectrum use.

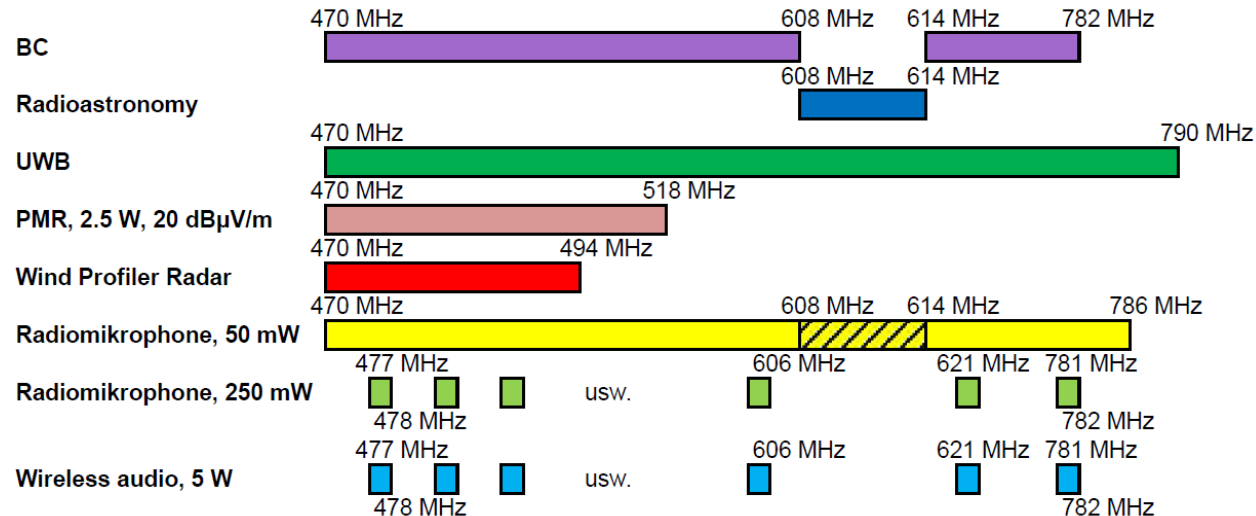
**Reply:**

- a) No.  
b) ...

- 7 a) Are those frequency bands also shared with secondary services such as PMSE, radioastronomy or wind-profile radar?  
b) If yes, please give details of those systems and their spectrum use.

**Reply:**

- a) Yes.  
b) See the figure below:



- 8** a) Do you foresee the adoption or expansion of television services broadcast using second-generation systems such as DVB-T2?  
b) If yes, please give indicative details of the planned transition, including any simulcast period.

**Reply**

- a) The possibility to adopt the DVB-T2 system is under study.  
b) The details of an eventual transition have not been considered yet.

- 9** a) Do you foresee a requirement for new and enhanced services, including HD and 3D television, on the terrestrial television platform?  
b) If yes, please give indicative details of the number and nature of services planned, and if known, the expected timeframe for their introduction.

**Reply**

- a) No, HDTV services are not planned today, however their introduction could be feasible on DVB-T2 basis.  
b) ...

- 10** a) Are there plans in your country to launch more multiplexes in the future?  
b) If yes, how many more and when? Please also indicate the expected timeframe for their introduction.

**Reply**

- a) No.  
b) ...

- 11** a) What is the amount of spectrum you foresee that will be required for terrestrial television broadcasting, if plans in Questions 8, 9 and 10 are to be supported, and services identified in Questions 6 and 7 are to be taken into account? Please indicate the modes of transmission that will be used, and timeframes.  
If appropriate, a suggested form to express these requirements is shown in Annex 3.

**Reply:**

- a) The necessary amount of spectrum will likely decrease.