

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

This questionnaire can be completed online at the following web page:

<https://extranet.itu.int/rsg-meetings/sg6/wp6a/Lists/DTTB%20Questionnaire/overview.aspx>

Login as: **Username:** (your TIES username)@ties.itu.int
Password: (your TIES password)

NOTE - Electronic versions of Annexes 1, 2 & 2 can be found under QUESTIONNAIRE in the WP 6A Share Folder on the WP 6A Sharepoint site.

Name of the Administration/Sector Member:

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

Contact person: Baxton Sirewu sirewu@potraz.gov.zw

- 1 a) What standards have you adopted for digital terrestrial television broadcasting?
DVB-T2, MPEG 4 Compression
- b) Have you started introduction of digital terrestrial television services?
Yes
- 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.

See Annex 1

- 2 a) Have you commenced analogue television switch-off?
Not Yet
- b) If you have any such plans, when do you expect to have completed the analogue switch-off process?

Mid 2015

- 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)?
70%

Place des Nations	Telephone	+41 22 730 51 11	Telex	421 000 uit ch	E-mail:	itumail@itu.int
CH-1211 Geneva 20	Telefax	Gr3: +41 22 733 72 56		Telegram	ITU GENEVE	http://www.itu.int/
Switzerland		Gr4: +41 22 730 65 00				

- b) If possible, please also provide details of the number or proportion of users who receive television primarily by terrestrial means.

70%

- 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)**).

None but 46 are planned for in the GE-06 A Plan

- b) How many are in the remaining part of the UHF band.

5 are in use and 143 are planned for in the GE-06A Plan

- 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.

No channels are currently in use however, the intention is to use the frequency band 470-694MHz

- 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.

We have adopted MFN. SFN can only be used in shadow areas with the transmitters in that network as gap fillers.

- 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

64 assignments are in this band but are not in use. The intention is to migrate them to below 694MHz

- d) How many are in the remaining part of the UHF band.

190 assignments are in the band 470-694MHz

- 6 a) Are those frequency bands also shared with other primary services?

NO

- b) If yes, please give details of those systems and their spectrum use.

- 7 a) Are those frequency bands also shared with secondary services such as PMSE (Programme Making and Special Events), radio astronomy or wind-profile radar?

Yes

- b) If yes, please give details of those systems and their spectrum use.

SAB and SAP

- 8 a) Do you foresee the adoption or expansion of television services broadcast using second-generation systems such as DVB-T2?

YES, the country adopted DVB-T2 as the standard

- b) If yes, please give indicative details of the planned transition, including any simulcast period.

Both digital and analogue will be transmitted in the transition period. Digital transmitters will be switched on by the end of February 2013. Analogue services will be switched off by Mid 2015

- 9 a) Do you foresee a requirement for new and enhanced services, including HD and 3D television, on the terrestrial television platform?

YES

- b) If yes, please give indicative details of the number and nature of services planned, and if known, the expected timeframe for their introduction.

1 multiplex is reserved for such services

Timeframes are still to be determined as the main priority is to roll out SD services as of now.

- 10 a) Are there plans in your country to launch more multiplexes in the future?

YES

- b) If yes, how many more and when? Please also indicate the expected timeframe for their introduction.

Maximum of six (6) layers of national coverage and up to 10 layers in the Metropolitan areas are targeted. Full introduction is targeted after analogue switch off.

- 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:

224MHz in UHF plus at least 48MHz in the VHF

ANNEX 1

What standards have you adopted for digital terrestrial television broadcasting? Have you started introduction of digital terrestrial television services? If yes, 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.

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) ¹	Any additional comments (e.g. duration of licences)
ZWE	2 VHF	DVB-T2, [tbc]	tbc	tbc	Fixed	25	70.0%	100%	20 SD MPEG4	(tbc)	280	5 licenses during the transition period and the rest after analogue switch off
	4 UHF	DVB-T2, [tbc] Technique that guarantees coverage	tbc	tbc	Fixed Mobile	25	70.0%	100%	20 SD MPEG4 5 HD MPEG4			

ANNEX 2

Question 5: *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.*

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.

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 how many are in the remaining part of the UHF band.

Area	Layer 1	Layer 2	Layer 3	Layer 4	Layer 5	Layer 6	Layer 7
1	27	37	39	44	54	56	66
2	23	69	38	-	57	56	-
3	23	69	43	-	57	52	-
4	30	32	39	61	35	52	68
5	21	28	31	45	48	50	-
6	60	-	33	32	49	67	65

ANNEX 3

Suggested form of presentation of reply to Question 11: *What is the minimum amount of spectrum you foresee that will be required for digital terrestrial television broadcasting in Bands IV & V, 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.*

One example methodology showing how spectrum requirements can be calculated from the different parameters using a set of assumptions can be found in Doc. [6A/59](#) submitted to WP 6A and which is currently under debate in this Working Party.

A sample response is shown for guidance only.

Country	No of multiplexes	System & modulation	FEC	GI	Reception mode ²	Capacity per multiplex (Mb/s)	Intended percentage population coverage	Content per multiplex	Total capacity (Mb/s)	Total spectrum bandwidth needed (MHz)	Any additional comments including time frames
ZWE	4 UHF	DVB-T2, [tbc]	[tbc]	[tbc]	Fixed Mobile	25	99.2%	SD/HD	120.0	280	
	2 VHF	DVB-T2, [tbc]	[tbc]	[tbc]	Fixed	10	90%	SD			