



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: SPAIN (E)

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

Contact person: Antonio Fernández-Paniagua

E-mail address: afernandezp@minetur.es

Telephone number: +34 91 346 15 07

- 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) ETSI EN 300744

UIT-T H.264 (HDTV)

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 (e.g. duration of licences)	Network
E	1	DVB-T, 64-QAM	2/3	1/4	Fixed	19.91	99%	98%	4 SD MPEG2	223.23	392 (470-862 MHz)	Public service multiplex until 2025	RGE1
	1	DVB-T, 64-QAM	2/3	1/4	Fixed	19.91	97%	98%	2 HD MPEG4			Public service multiplex until 2025	RGE2
	1	DVB-T, 64-QAM	2/3	1/4	Fixed	19.91	97%	98%	4 SD MPEG2			Public service multiplex until 2025	REG1
	1	DVB-T, 64-QAM	2/3	1/4	Fixed	19.91	30% ¹	98%	2 HD MPEG4			Public service multiplex until 2025	REG2
	1	DVB-T, 64-QAM	2/3	1/4	Fixed	19.91	97%	95%	6 SD MPEG2			Private service multiplex licensed until 2025	SFN67
	1	DVB-T, 64-QAM	2/3	1/4	Fixed	19.91	97%	95%	5 SD MPEG2			Private service multiplex licensed until 2025	SFN68
	1	DVB-T, 64-QAM	2/3	1/4	Fixed	19.91	97%	95%	5 SD MPEG2			Private service multiplex licensed until 2025	SFN69
	1	DVB-T, 64-QAM	2/3	1/4	Fixed	19.91	95%	95%	1 HD MPEG4 + 4 SD MPEG2			Private service multiplex licensed until 2025	MPE1
	1	DVB-T, 64-QAM	2/3	1/4	Fixed	19.91	95%	95%	1 HD MPEG4 + 3 SD MPEG2			Private service multiplex licensed until 2025	MPE2
	1	DVB-T, 64-QAM	2/3	1/4	Fixed	19.91	95%	95%	1 HD MPEG4 + 3 SD MPEG2			Private service multiplex licensed until 2025	MPE3
	1	DVB-T, 64-QAM	2/3	1/32	Fixed	24.13	50% ¹	80% ¹	5 SD MPEG2			Local multiplex licensed until 2020	LOC

¹ Related to the total population

- 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: Switch-off completed on 3rd April, 2010

- 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) 98%

b) 87 % (13% Satellite; 5% Cable + IP)

- 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: No analogue television anymore.

- 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) Used : 470 – 862 MHz (channels 21-69)

Intended: 470 – 790 MHz (channels 21-60) (from 1st January 2015)

b)



- c) Band 694 – 790 MHz (channels 49-60): 4747 assignments
- d) Band 470 – 694 MHz (channels 21-48): 5243 assignments
- Band 790 – 860 MHz (channels 61-69): 12371 assignments

- 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) 470 – 790 MHz No

790 – 830 MHz Mobile Service (excluding aeronautical mobile). Allocated according to RR 5.316A, 5.316B, 5.317A but not in use.

830 – 862 MHz Mobile Service (excluding aeronautical mobile) Allocated according to RR 5.316, 5.316A, 5.316B, 5.317A but not in use.

Fixed Service. Allocated but not in 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?
- b) If yes, please give details of those systems and their spectrum use.

Reply: a) 470 – 790 MHz Land Mobile Service, intended for applications ancillary to broadcasting

790 – 830 MHz No

830 – 862 MHz No

- 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) Yes.
b) No plan 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) Yes
b) No plan yet.

- 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. 10 multiplex in 470 – 862 MHz band until 31st December 2014.
10 multiplex in 470 – 790 MHz band since 1st January 2015

- 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: Under Study