

Received: 15 May 2013 (via email)

The Arab States Broadcasting Union (ASBU) is submitting the attached responses to Circular Letter 6/LCCE/78, from Tunisia Telediffusion (Attachment 1) and the Palestinian Authority (Attachment 2).

Contact: BASSIL ZOUBI, ASBU Technical Department

Email: [bassil.zoubi@asbu.net](mailto:bassil.zoubi@asbu.net)

## Attachment 1

N°	Question	Tunisia
1	What standards have you adopted for digital terrestrial television broadcasting?	DVB-T/MPEG4 H264
	Have you started introduction of digital terrestrial television services? number of multiplexes in use	Yes 1
2	Have you commenced analogue television switch-off?	NO
	If you have any such plans, when do you expect to have completed the analogue switch-off process?	2015
3	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)?	100%
	provide details of the number or proportion of users who receive television primarily by terrestrial means	30%
4	how many analogue television transmitters use channels in the frequency sub-band 694-790 MHz	25
	How many are in the remaining part of the UHF band.	60
5	What frequencies/channels are currently used or intended to be used by digital terrestrial television broadcasting in your country?	470-782 Mhz
	how many digital television assignments/allotments use channels in the frequency sub-band 694-790 MHz	60
	How many are in the remaining part of the UHF band.	120
6	Are those frequency bands also shared with other primary services?	No
	If yes, please give details of those systems and their spectrum use.	
7	Are those frequency bands also shared with secondary services such as PMSE, radioastronomy or wind-profile radar?	yes
	If yes, please give details of those systems and their spectrum use.	Not uniform_low power
8	Do you foresee the adoption or expansion of television services broadcast as DVB-T2?	Yes
	If yes, please give indicative details of the planned transition, including any simulcast period.	Second multiplex, Simulcast more than 10 years
9	Do you foresee a requirement for new and enhanced services, including HD and 3D television, on the terrestrial television platform?	yes
	If yes, please give indicative details of the number and nature of services planned, and if known, the expected timeframe for their introduction.	2 to 12 or more in the future
10	Are there plans in your country to launch more multiplexes in the future?	Yes
	If yes, how many more and when? Please also indicate the expected timeframe for their introduction.	1 to 5 More multiplexes in 2015-2025
11	What is the amount of spectrum you foresee that will be required for terrestrial television broadcasting, ....	for UHF: 470-790 Mhz

## Attachment 2

- 3 -

### 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 & 3 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:**

**E-mail address:**

**Telephone number:**

- 1
- What standards have you adopted for digital terrestrial television broadcasting?
  - Have you started introduction of digital terrestrial television services?
  - 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. No  
b. No  
c. —

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

Reply: a. No  
b. —

- 3
- 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)?
  - If possible, please also provide details of the number or proportion of users who receive television primarily by terrestrial means.

Reply: a. less than 10%.  
b. : / 5%.

C:\USERS\ADMIN\APPDATA\LOCAL\MICROSOFT\WINDOWS\TEMPORARY INTERNET FILES\CONTENT.IE5\SY587214\R00-SG06-CIR-0078-CIRCULAR LETTER-QUESTIONNAIRE.DOCX



- 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. Under Study.

- 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. 470 - 694



ANNEX 1

Suggested form of presentation of reply to Question 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.*

A sample response is shown for guidance only.

Country	No of multiplexes	System & modulation	FEC	GI	Reception mode <sup>1</sup>	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) <sup>2</sup>	Any additional comments (e.g. duration of licences)
XX	2	DVB-T, 64-QAM	2/3	1/32	Fixed	24.10	98.0%	99.2%	9 SD MPEG2	169.7 plus two new muxes (tbc)	256	Public service multiplexes licensed until 2022
	1	DVB-T2, 256-QAM	2/3	1/128	Fixed	40.20	98.0%	99.2%	5 HD MPEG4			Public service multiplex licensed until 2022
	3	DVB-T, 64-QAM	¼	1/32	Fixed	27.10	89.0%	92.0%	11 SD MPEG2			Licensed until 2024
	1	[DVB-T, tbc]	[tbc]	[tbc]	Fixed	[tbc]	[tbc]		[tbc]			Expected local multiplex
	1	[DVB-T2, tbc]	[tbc]	[tbc]	Fixed	[tbc]	[tbc]		[tbc]			Expected local multiplex
YY	1	DVB-T2, 64-QAM	2/3	1/4	Portable indoor	22.6	-	60%	3 HD MPEG4	22.6		From 2013

<sup>1</sup> E.g. fixed, portable outdoor/mobile, portable indoor.

<sup>2</sup> Refer Sections 2 and 3 on page 1 of this circular.



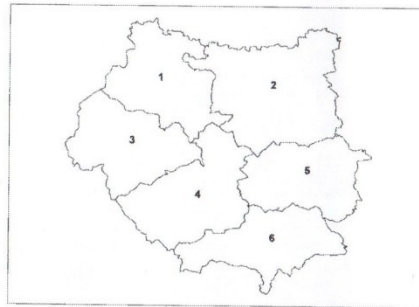
## ANNEX 2

Suggested presentation of reply to 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 <sup>3</sup>	Capacity per multiplex (Mb/s)	Intended percentage population coverage	Content per multiplex	Total capacity (Mb/s)	Total spectrum bandwidth needed (MHz) <sup>4</sup>	Any additional comments including time frames
XX	6	DVB-T2, 256-QAM	2/3	1/128	Fixed	40.20	99.2%	7 HD MPEG4	187.0		1 now, 5 more from 2020
	2	DVB-T2, 16-QAM	1/2	1/8	Fixed	13.1	90%	2 HD MPEG4			1 in 2013, 1 more from 2020
YY	4	DVB-T2, 64-QAM	2/3	1/4	Portable indoor	22.6	60%	15 SD MPEG4	90.4		1 from 2013 2 more from 2015, 1 more from 2020
ZZ	4	DVB-T2, 256-QAM	2/3	1/128	Fixed	40.20	99.2%	7 HD MPEG4	160.8		1 from 2013 2 more from 2015, 1 more from 2020

<sup>3</sup> E.g. fixed, portable outdoor/mobile, portable indoor.

<sup>4</sup> Refer Sections 2 and 3 on page 1 of this circular.

- 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. No one  
b. 6 channel (25, 23, 30, 31, 32, 34)

- 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. until now there is no one. (b) - Gaza (47, 30, 56, 5), Beit Jala (44)  
Hebron (23, 34, 53), Jerico (26), Talkarem (36, 49), Ramallah (23, 34, 53)  
E. 4  
d. —

- 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 (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. No  
b. —

- 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. No  
b. —

