

CAMEROON

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

Name of the Administration: Cameroon

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?
Answer: DVB-T2, MPEG-4 AVC
- b) Have you started introduction of digital terrestrial television services?
Answer: A digital migration strategy has been adopted by the Government. According to the strategy, introduction of digital terrestrial television services will start soon.
- 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.
Answer: Digital television services is planned to be introduce primarily in VHF - band III. Then use of the UHF will follow depending on coverage planning considerations. Two multiplexes are to be launched. The percentage of population they are intended to cover is 85%.
- 2**
- a) Have you commenced analogue television switch-off?
Answer: Not as yet
- b) If you have any such plans, when do you expect to have completed the analogue switch-off process?
Answer: analog switch off process is expected to be completed by 17 June 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)?
Answer: typically
- 32,87% of population own a TV set**
30,71 % of household own a TV set
1,94 % of household have access to TV services through cable networks or satellite providers

0,57 % of household have access to TV services through satellite services provider

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

Answer: See answer in Question 3-a)

- 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)**).

Answer: None

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

Answer : 33 analogue television transmitters

- 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.

Answer: Bands intended primarily to be used for digital television :

Bande III - VHF (174-230) MHz

Bande IV - UHF (470-582) MHz and (582-694) MHz

- 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.

Answer: MFN networks are to be implemented primarily. In the few cases of SFN – the modified SFN has been adopted whereby multiple sites in a given area are given the same set of frequencies but coordinated and notified as MFN.

- 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

Answer: None

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

Answer: Typically 4 as the agreed target number of multiplexers per any site in the current process of modification of the GE 06 Plan.

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

Answer: No – the band 470-694MHz is designated exclusively for DTT and associated auxiliary services. The band 694-790MHz is under consideration for allocation to mobile service as envisaged by WRC-12 Resolution 232. The band 790-862MHz has mobile service implemented already.

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

Answer:

- 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?

Answer: No

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

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

Answer: Yes – Cameroon has already adopted the DVB-T2, MPEG4 as the standard for DTT

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

Answer: No transition period will occur since introduction of DTT would be already in DVB-T2, MPEG4

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

Answer: Yes – all such premium services HD, 3G, etc, shall have to be implemented within the designated/available spectrum bands 174-230MHz and 470-694MHz UHF

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

Answer: No actual details are known at this stage in terms of number and nature. The expected timeframe is typically after the official Analogue Switch off in June 2015 as the focus now is the replace analogue transmission with digital before contemplating on premium services

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

Answer: Not as yet

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

Answer:

- 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.

Answer: Kindly see annexe3

ANNEX 1

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.*

Country	No of multiplexes	System & modulation	FEC	GI	Reception mode ¹	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) ²	Any additional comments (e.g. duration of licences)
CME	2 (minimum target)	DVB-T2 MPEG-4, (mainly modulation that provides for smart balance between coverage and capacity)	[tbc] (mainly FEC that guarantees coverage)	[tbc] (mainly GI that guarantees coverage)	Fixed, mobile and portable (mainly)	20 Prg/Channel [typical]	None [typical]	85% (as initial Target representing coverage of current Analogue Terrestrial Tv)	SD (mainly)	- (typical)	Gross total of 280MHz 224MHz en UHF (470-694 MHz) Et 56 MHz en VHF (174-230 MHz)	None

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.*

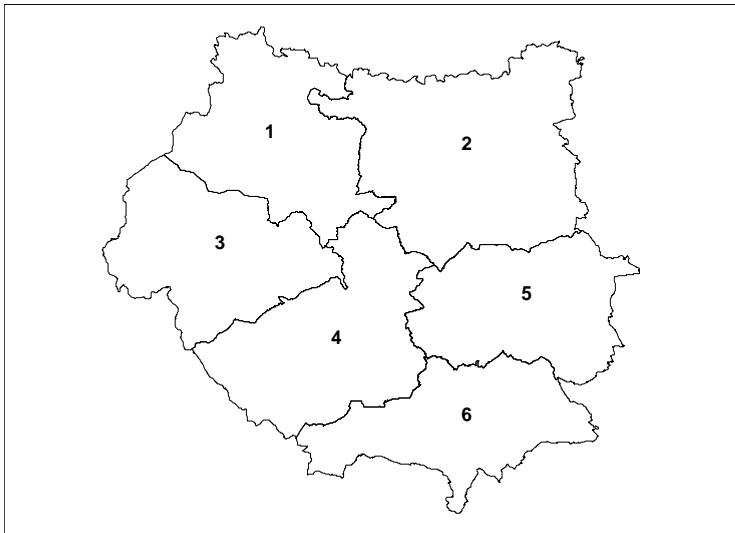
¹ E.g. fixed, portable outdoor/mobile, portable indoor.

² Refer Sections 2 and 3 on page 1 of this circular.

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

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.*

Country	No of multiplexes	System & modulation	FEC	GI	Reception mode ³	Capacity per multiplex (Mb/s)	Intended percentage population coverage	Content per multiplex	Total capacity (Mb/s)	Total spectrum bandwidth needed (MHz) ⁴	Any additional comments including time frames
CME	2 (VHF)	DVB-T2, MPEG-4 (mainly modulation that provides for smart balance between coverage and capacity)	[tbc] (mainly FEC that guarantees coverage)	[tbc] (mainly GI that guarantees coverage)	Fixed, mobile and Portable (mainly)	20 prg/Channel [typical]	85%	SD (mainly)	- [typical]	Gross total of 280MHz 224MHz en UHF (470-694 MHz) Et 56 MHz en VHF (174-230 MHz)	None
	2 (UHF)	DVB-T2, MPEG-4 (mainly modulation that provides for smart balance between coverage and capacity)	[tbc] (mainly FEC that guarantees coverage)	[tbc] (mainly GI that guarantees coverage)	Fixed, mobile and Portable (in city core areas)	20 prg/Channel [typical]	85% (VHF and UHF coverage will be complementary)	SD/HD-			None

³ E.g. fixed, portable outdoor/mobile, portable indoor.

⁴ Refer Sections 2 and 3 on page 1 of this circular.