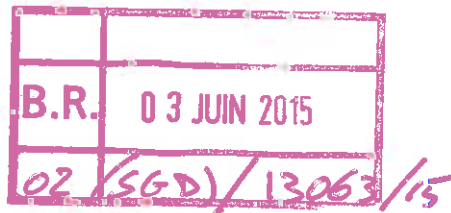




HEAD OF STAFF

N *09/11.1/6040-15*
«*26*» *05* 2015.

Francois Rancy
Director of Radiocommunication Bureau (BR)
Fax: +41 22 733 72 56



Dear Mr Rancy

In response to your No 6/LLCE/90 circular letter, dated 3 december 2014, I present questionnaire completed by Administration of Communications of Armenia, regarding Broadcast Service Usage and further frequencies spectrum requirements.

Attached 7 pages

Sincerely,

G. Grigoryan



ANNEX 1

Suggested form of presentation of reply to questions 2, 5, 11 and 13:

A sample response is shown in *Italics* for guidance only.

Country	Band		Number of Transmitting Stations*			
			Analogue Radio (Q11b & Q11c)	Digital Radio (Q13d & Q13h)	Analogue TV (Q2a & Q2b)	Digital TV (Q5b & Q5c)
	Channel bandwidth (MHz)		<i>HF 9 kHz</i> <i>VHF I 180 kHz</i> <i>VHF II 300 kHz</i>		<i>8 MHz</i>	<i>8 MHz</i>
ARM	LF	148.5-283.5 kHz				
	MF	525-526.5 kHz				
	MF	526.5-1606.5 kHz	<i>1</i>			
	MF	1606.5-1705 kHz				
	HF	2.3-26.1 MHz**	<i>12</i>			
	VHF I	47-50 MHz				
		50-54 MHz				
		54-68 MHz				
		68-72 MHz	<i>1</i>			
		76-87.5 MHz				
	VHF II	87.5-108 MHz	<i>148</i>			
	VHF III	174-216 MHz			<i>111</i>	<i>(12)</i>
	VHF III	216-230 MHz			<i>61</i>	<i>(3)</i>
	UHF IV	470-694 MHz			<i>283</i>	<i>352 (513)</i>
	UHF V	694-790 MHz			<i>54</i>	
	UHF V	790-890 MHz				
	UHF V	890-960 MHz				
		1452-1492 MHz				
	11.7-12.5 GHz					
	12.5-12.7 GHz					
	40.5-42.5 GHz					
	74-76 GHz					

* Transmitting stations please include "main stations" and "relay stations". Please use parenthesis to indicate stations that have still to be brought into use

** The bands 3 900-3 950^D, 3 950-4 000^D kHz; the bands for tropical broadcasting: 2 300-2 498, 3 200-3 400^D, 4 750-4 995^D, 5 005-5 060^D kHz and the Article 12 bands 5 900-5 950^D, 5 950-6 200, 7 200-7 300, 7 300-7 400^D, 7 400-7 450, 9 400-9 500^D, 9 500-9 900, 11 600-11 650^D, 11 650-12 050, 12 050-12 100^D, 13 570-13 600^D, 13 600-13 800, 13 800-13 870^D, 15 100-15 600, 15 600-15 800^D, 17 480-17 550^D, 17 550-17 900, 18 900-19 020^D, 21 450-21 850, 25 670-26 100.

^D Resolution 517 (Rev.WRC-07) applies. In the HF bands subject to Article 12 see also No. 5.134.

Annex 2 to Attachment 1 of the Questionnaire

Suggested form of presentation of reply to question 4: *If your country has switched or is considering switching to digital terrestrial television broadcasting, what system standard is it using or considering adopting? When did your country start, or when is it proposing to start the introduction of digital terrestrial television services? Please provide further detail on the number of multiplexes in use, their technical specifications, the percentage of geographic area or population they cover or are intended to cover and the total spectrum use.*

A sample response is shown in *italics* for guidance only.

Country	No of multi-plexes	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)	Any additional comments (e.g. duration of licences)
ARM	4	DVB-T2, 256-QAM	3/4	1/128	Fixed	27.02	90%	99.8%	6 TV SD, 4 Radio in Yerevan, 9TV SD, 4 Radio in regions	81.06 in Yerevan, 20 in regions	220 MHz	From 2015

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

Questionnaire on spectrum requirements for the future of sound and television broadcasting

Name of the Administration:	Armenia
Contact person:	Sahak Davtyan
E-mail address:	s.davtyan@tna.am
Telephone number:	3741 65 28 45

Name of the Sector Member:	
Contact person:	
E-mail address:	
Telephone number:	
What best describes your organisation? Commercial broadcaster/Public service broadcaster/ Service provider/ Other (please describe)	
The geographical area over which you operate:	

Name of the Administration:	Armenia
Contact person:	Arsenyan R. M.
E-mail address:	ether@web.am
Telephone number:	374 288 636

Name of the Sector Member:	
Contact person:	
E-mail address:	
Telephone number:	
What best describes your organisation? Commercial broadcaster/Public service broadcaster/ Service provider/ Other (please describe)	
The geographical area over which you operate:	

SECTION ONE – Television broadcasting

- 1)
 - a) Is your country still using analogue television?
 - b) If yes, has analogue television switch-off commenced?
 - c) If your country has any plans to switch-off analogue television:
 - i) When is the analogue switch-off process expected to be completed?
 - ii) How much extra spectrum will be required during the transition phase to digital terrestrial television broadcasting?

Reply: a) Yes; b) No; c) i) *planned on 2015*; c) ii) -144 MHz in Yerevan and 80 MHz in regions

- 2) a) Please indicate how many analogue television transmitters are in operation in your country and in which bands.
b) What channel bandwidths are used for analogue television?
c) What is the spectrum requirement for analogue television in your country?

A proposed format for responses to question 2a) and 2b) is provided in Annex 1

Reply:a) See Annex 1; b) See Annex 1; c) - 224 MHz

- 3) a) What is the percentage of viewer uptake of terrestrial television in your country?
b) If possible, please also provide details of the number or proportion of users who receive television primarily by terrestrial means by:
i) Fixed roof top antenna, or
ii) Portable indoor antenna.

Reply:a) 93.5%;b) i) 73%; b) ii) 19%

- 4) If your country has switched or is considering switching to digital terrestrial television broadcasting
a) What system standard is your country using or considering adopting (as specified in Recommendations ITU-R BT.1306 and BT.1877)?
b) When did your country start or when is it proposing to start the introduction of digital terrestrial television services?
c) Please provide further detail on the number of multiplexes in use, their technical specifications, the percentage of geographic area or population they cover or are intended to cover and the total spectrum use.

A proposed format for detailed responses is provided in Annex 2

Reply:a) See Annex 2;b) See Annex 2; c)See Annex 2

- 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) Please indicate how many digital terrestrial television transmitters are currently used or intended to be used and in which bands.
c) What channel bandwidth is used or intended to be used for digital terrestrial television in your country?

A proposed format for responses to question 5b) and 5c) is provided in Annex 1

Reply:a)10 channels are used:

478-486 MHz/22 TVC (TV channel); 486-494 MHz/23 TVC; 502-510 MHz/ 25 TVC; 526-534 MHz/ 28 TVC; 534-542 MHz/ 29 TVC; 542-550 MHz/ 30 TVC; 574-582 MHz/ 34 TVC; 582-590 MHz/ 35 TVC; 614-622 MHz/ 39 TVC; 670-678 MHz/ 46 TVC.

15 channels are intended to be used:

182-190 MHz/ 7 TVC; 190-198 MHz/ 8 TVC; 206-214 MHz/ 10 TVC; 222-230 MHz/ 12 TVC; 470-478 MHz/ 21 TVC; 494-502 MHz/ 24 TVC; 510-518 MHz/ 26 TVC; 526-534 MHz/ 28 TVC; 558-566 MHz/ 32 TVC; 566-574 MHz/ 33 TVC; 582-590 MHz/ 35 TVC; 606-614 MHz/ 38 TVC; 630-638 MHz/ 41 TVC; 646-654 MHz/ 43 TVC; 654-662 MHz/ 44 TVC.

b) See Annex 1;c) See Annex 1

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

Reply:a) - No;b) --

- 7) a) Are the terrestrial television frequency bands also shared with secondary services used for the support of broadcasting such as SAB/SAP (services ancillary to broadcasting/production), or other types of services such as 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) Does your country foresee a requirement for new and enhanced services, including multimedia and data applications, HD, 3D, and UHD 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;b) --

- 9) 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) Discussions in progress;b) -

- 10) a) What is the amount of spectrum your country foresees will be required for terrestrial television broadcasting, taking into consideration the responses to Questions 5, 6, 7, 8, and 9? Please indicate the modes of transmission that will be used, and timeframes.

Reply:a) -200 MHz

SECTION TWO – Sound broadcasting

- 11) a) What analogue sound broadcasting standards are used in your country and what bands are they operating in?
- b) Please indicate how many analogue radio transmitters are in operation in your country and in which bands.
- c) What channel bandwidths do they use?

A proposed format for responses to question 11b) and 11c) is provided in Annex 1

Reply:a) OIRT/ 69.77 MHz and CCIR/ 87.5 – 108 MHz

b) See Annex 1; c) See Annex 1

- 12) a) Is additional spectrum required for growth in the analogue sound broadcasting platform in your country?
- b) If yes, how much additional spectrum is required?

Reply:a) No;b) --

- 13) a) Is your country considering introducing, or has it already introduced digital sound broadcasting?
- b) If yes, which system standards are used or are being considered for adoption (as specified in Recommendations ITU-R BS.1114, BS.1514, BS.1615)?
- c) When did your country start or when does it propose to start digital sound broadcasting?
- d) What channel bandwidths is your country using or considering using?
- e) What frequencies are currently used or intended to be used by digital sound broadcasting in your country? Please distinguish between those in use and those intended to be used.
- f) What is the percentage of the population that is covered by digital sound broadcasting by direct reception in your country?
- g) What additional spectrum was required or is considered to be required for the transition to digital sound broadcasting?
- h) Please indicate how many digital radio transmitters are currently used or intended to be used and in which bands.
- i) What is the spectrum requirement for digital sound broadcasting in your country?
- j) If your country has introduced digital sound broadcasting, how long will it continue to use analogue sound broadcasting?

A proposed format for responses to question 13d) and 13h) is provided in Annex 1

Reply:a) No;b) --;c)Discussions in progress ;d) See Annex 1 --; e) --;g) --;h) See Annex 1 --; i) --;j) --

- 14) a) Are the terrestrial sound broadcasting bands also shared with other primary services in your country?
b) If yes, please give details of those systems and their spectrum use.

Reply:a) No;b) --

- 15) a) Are the terrestrial sound broadcasting bands also shared with secondary services e.g., used for the support of broadcasting such as SAB/SAP (services ancillary to broadcasting/production), or other types of services such as radio astronomy or wind-profile radar?
b) If yes, please give details of those systems and their spectrum use.

Reply:a) No;b) --

- 16) a) What is the amount of spectrum your country foresees will be required for terrestrial sound broadcasting, taking into consideration the responses to the previous questions? Please indicate the modes of transmission that will be used, and timeframes.

Reply:a) --

SECTION THREE –Multimedia broadcasting

- 17) a) Is your country considering introducing or has already introduced multimedia broadcasting?
b) If yes which system standards is your country using or considering using (as specified in Recommendations ITU-R BT.1833 and BT.2016)?
c) In which Bands?
d) When did your country start or when does it propose to start digital multimedia broadcasting?
e) What are the current and proposed population coverages for digital multimedia broadcasting in your country?
f) What is the spectrum requirement for multimedia broadcasting in your country?
g) If your country has introduced digital multimedia broadcasting, please provide further information to describe the system, its implementation and any limitations on its operation.

Reply:a) No; b) --; c) --; d) --; e) --; f) --; g) --