

## QUESTIONNAIRE ON SPECTRUM REQUIREMENTS FOR THE FUTURE OF SOUND AND TELEVISION BROADCASTING

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<b>What best describes your organisation?</b> Commercial broadcaster/Public service broadcaster/ Service provider/ Other (please describe)	<b>National Broadcaster</b>
<b>The geographical area over which you operate:</b>	

## **SECTION ONE – Television broadcasting**

- 1) a) Is your country still using analogue television?  
**YES**
- b) If yes, has analogue television switch-off commenced?  
**NO**
- c) If your country has any plans to switch-off analogue television:
- i) When is the analogue switch-off process expected to be completed?  
**YES, 2020**
- ii) How much extra spectrum will be required during the transition phase to digital terrestrial television broadcasting?  
**228 MHz**

**Reply:**

- 2) a) Please indicate how many analogue television transmitters are in operation in your country and in which bands.  
**257 Stations, VHF Band III and Band IV**
- b) What channel bandwidths are used for analogue television?  
**Bandwidth 6 MHz**
- c) What is the spectrum requirement for analogue television in your country?  
**60 MHz**

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

**Reply:**

- 3) a) What is the percentage of viewer uptake of terrestrial television in your country?  
**92.7%**
- 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:**

- 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: See Annex -1**

- 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) **28 ( 257 Stations Intended ) UHF Band**  
 (b) **UHF Band IV & V 228 ( 346 Stations )**  
 (c) **8 MHz Bandwidth**

- 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:**

- 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: NO**

- 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: YES , we are planning to launch data transmission with return , HDTV , 3D, UHDTV, Mobile TV and Handheld .**

**For the time frame , It will depend on the situation of encoders and set - top box or IRD . We expect within 5 years of time.**

- 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: YES, 100 + Channels within 3 to 4 years but it will depend on public demand .**

- 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: 104 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: FM, MF & HF (Analogue)**

**FM 87.5 ~ 108.5 MHz (67) Stations**

**MF 526.5 ~ 1606.5 KHz (3) Stations**

**HF 2.3 ~ 26.1 MHz (3) Stations**

- 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: NO**

- 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: Upon the technology effectiveness and market available of the digital radio receiver and upon these facts we will determine which standard should need to adopt such as DAB, DAB + or DRM, DRM+**

- 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: NO**

- 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: NO**

- 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:**

### **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: We are planning for the providing of digital multimedia broadcasting namely "TV Browser" Service. Scribers are able to access 2000 + pages of electronic multimedia Information in daily up-date . Later on we will use IPTV , Internet Streaming , interactive on line library .Later on we will provide the audience the new services such as OTT, VOD, HbTV.**

## Annex- 1, MRTV

Country	No of multiplexes	System & modulation	FEC	GI	Reception mode <sup>2</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)	Any additional comments (e.g. duration of licences)
Myanmar	4	DVB-T2 64-QAM	2/3	1/16	Fixed Rooftop	30	66.23%	99.90%	SD MPEG-4	30	228	October, 2013

<sup>2</sup> E.g. fixed, portable outdoor/mobile, portable indoor.