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| To Administrations of Member States of the ITU, Radiocommunication Sector Members, ITU-R Associates participating in the work of Radiocommunication Study Group 6 and ITU-R Academia |

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

References: Documents [6/ 93](http://www.itu.int/md/R12-SG06-C-0093/en) and [6/249](http://www.itu.int/md/R12-SG06-C-0249/en)

1 Study Group 6 (SG 6) is the ITU-R Study Group assigned to the Broadcasting service. Its scope covers radiocommunication broadcasting, including vision, sound, multimedia and data services principally intended for delivery to the general public.

2 SG 6 created a Rapporteur Group to look at the future spectrum requirements for the Broadcasting service in light of technical developments, decisions taken by WRC-03 and WRC-07 on the use of digital modulation in the HF Bands, and the changes to frequency allocations at WRC-97, WRC-07 and WRC-12, as part of the work in maintaining its catalogue of Reports and Recommendations.

3 One of the questions that needs to be addressed by SG 6 include how broadcast requirements are changing with the move to digital broadcast systems, and the introduction of new and enhanced broadcast services.

4 The following questionnaire, which is being sent to all Administrations and Sector Members, is designed to gather information on spectrum use by sound and television broadcasting in the bands allocated on a Regional[[1]](#footnote-1) or global basis to terrestrial broadcasting (see Annex 1).

5 Administrations and Sector Members are also invited to make more detailed inputs addressing the matter of current and future spectrum requirements for radio and television broadcasting to the next meeting of WP 6A and SG 6.

6 Administrations and Sector Members are requested to submit responses to brsgd@itu.int by 17 October 2014.

David Barrett

Chairman SG6 Rapporteur Group on spectrum requirements
for the future of the broadcasting Service

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

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| Name of the Administration: | **Jamaica** |
| Contact person: | **Ms. Wahkeen Murray** |
|  E-mail address: | **wmurray@mstem.gov.jm** |
|  Telephone number: | **(876) 929-8990-9** |

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| Name of the Sector Member: | **Spectrum Management Authority** |
| Contact person: | **Peter Scott** |
|  E-mail address: | **pscott@sma.gov.jm** |
|  Telephone number: | **(876) 922-8884** |
| What best describes your organisation?Commercial broadcaster/Public service broadcaster/ Service provider/ Other (please describe) | **Spectrum Regulator** |
| The geographical area over which you operate: | Region 2 |

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:

Yes, Jamaica still uses analogue television. Analogue television switch-off has not yet commenced, however, it is being proposed that the switch-off process will be completed in 2020. The amount of spectrum that will be required during the transition phase is dependent on multiplex model that is adopted. At this stage no decision has been made with respect to the model.

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?

Reply: See Annex 1 for responses to a) and b). To achieve a reasonable coverage of the island

 using analogue television, a minimum of ten (10) channels is required.

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:

Data collected in 2012 revealed that, on average, a maximum of 1,166,571 persons watch Free-to-Air (FTA) broadcasting **only**, on a daily basis. This figure represents approximately 43% of the 2012 population. However, there are STV subscribers who will access FTA broadcasting services as well but at this time this information is not available. We cannot say what proportion use fixed roof top or portable indoor antennas.

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.

Reply:

Jamaica is considering switching to DTTB and is proposing that DTTB will be introduced in 2018. At this time we are considering adopting the ATSC standard. There are no multiplexes currently set up in Jamaica; the multiplex system will take effect as we move towards DTTB. The number of multiplexes that will be required is not known at this time.

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: For DTTB, the UHF band ranging from 482-698 MHz is proposed. Currently, the VHF

 band (channels 4-13) is used for analogue television. See Annex 1 for responses to

 questions b) and c).

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: Yes, the UHF band is shared on a primary basis with fixed and mobile services.

 The portion of the band currently assigned for these other services is from 470-

 482 MHz and are primarily used for security systems.

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: Yes, both terrestrial television bands are shared with secondary services

 used for the support of broadcasting such as SAB and SAP. Applications

 include, wireless microphones, cordless cameras, in-ear monitor, et al.

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. Jamaica foresees a need for new and enhanced services. As such, equipment being proposed for Jamaica’s Digital Terrestrial Television Broadcasting will facilitate the standard definition (SD) but has the capacity for High Definition (HD) upgrade. At this stage of the planning process we cannot provide details on the number or nature of services to be provided but as previously stated, the infrastructure will be in place for these services.

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:

 Please note response for question 4.

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:

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?

Reply:

The analogue sound broadcasting standard used in Jamaica is Stereophonic and only the VHF II band is currently used. See Annex 1 for responses to b) and c).

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?

Reply:

We do not currently have digital sound broadcasting and a mandated switch-over is not being contemplated. The current position is to turn on digital systems based on demand.

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: It is envisaged that less spectrum will be required in the digital paradigm than what is .

 currently used for analogue broadcasting due to the spectral efficient gain that is

anticipated from the switch-over

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:

The Broadcasting Commission (content regulator) has confirmed that some broadcasters in Jamaica have introduced multimedia broadcasting. They have also confirmed that very little information is readily available on this topic at this time.

ANNEX 1

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

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| Country | Band | Number of Transmitting Stations\* |
| Analogue Radio) (Q11b & Q11c) | Digital Radio(Q13d & Q13h) | Analogue TV(Q2a & Q2)b | Digital TV(Q5b & Q5c) |
| Channel bandwidth (MHz) | 200 kHz |  | *6 MHz* | *6 MHz* |
| JamaicaUHF V694-790 MHz | LF | 148.5-283.5 kHz |  |  |  |  |
| MF | 525-526.5 kHz |  |  |  |  |
| MF | 526.5-1606.5 kHz |  |  |  |  |
| MF | 1606.5-1705 kHz |  |  |  |  |
| HF | 2.3-26.1 MHz\*\* |  |  |  |  |
| VHF I | 47-50 MHz |  |  |  |  |
|  | 50-54 MHz |  |  |  |  |
|  | 54-68 MHz |  |  |  |  |
|  | 68-72 MHz |  |  | *7* |  |
|  | 76-87.5 MHz |  |  |  |  |
| VHF II | 87.5-108 MHz | 179 |  |  |  |
| VHF III | 174-216 MHz |  |  | *26* |  |
| VHF III | 216-230 MHz |  |  |  |  |
| UHF IV | 470-694 MHz |  |  |  |  |
| 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 3900-3950D, 3950-4000D kHz; the bands for tropical broadcasting: 2300-2498, 3200-3400D, 4750-4995 D, 5005-5060D kHz and the Article 12 Bands 5 900-5 950D, 5 950-6 200, 7 200-7 300, 7 300-7 400D, 7 400-7 450, 9 400-9 500D, 9 500-9 900, 11 600-11 650D, 11 650-12 050, 12 050-12 100D, 13 570-13 600D, 13 600-13 800, 13 800-13 870D, 15 100-15 600, 15 600-15 800D, 17 480-17 550D, 17 550-17 900, 18 900-19 020D, 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

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 standards is it using or considering adopting? When did your country start, or when is it proposed 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.

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| Country | No of multi-plexes | System & modulation | FEC | GI | Reception mode[[2]](#footnote-2) | 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) |
| Jamaica | 0 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |

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1. Regions 1, 2 or 3 as defined in Nos. 5.3 to 5.9 of the Radio Regulations. [↑](#footnote-ref-1)
2. E.g. fixed, portable outdoor/mobile, portable indoor. [↑](#footnote-ref-2)