



Radiocommunication Bureau

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**Circular letter
6/LCCE/78**

11 May 2012

**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 terrestrial television broadcasting in connection with WRC-15 Agenda item 1.2

References: Administrative Circular CA/201

- 1 Consistent with the directives set forth by Administrative Circular [CA/201](#) and in accordance with the outcomes of the first session of the Conference Preparatory Meeting 15-1, ITU-R Working Party 6A seeks estimates from Members States and Sector Members of current and future spectrum requirements for terrestrial television broadcasting in Region 1 and Iran.
- 2 One particular question that will be addressed by the JTG 4-5-6-7 is to confirm the lower edge of the allocation to the mobile service made at WRC-12 from 694-790 MHz. As a result Working Party 6A realizes the JTG 4-5-6-7 needs to be fully informed about the implications to the broadcasting service consequential to that decision.
- 3 The following questionnaire, which is being sent to all Administrations and Sector Members in Region 1 and Iran, is designed to gather information on spectrum use in the band 694-790 MHz for television broadcasting.
- 4 Administrations and Sector Members are also invited to make more detailed inputs addressing the matter of current and future spectrum requirements for television broadcasting to the next meeting of WP 6A.
- 5 Administrations and Sector Members are requested to submit responses to brsgd@itu.int or rsg6@itu.int by 31 July 2012.

François Rancy
Director, Radiocommunication Bureau

At the request of the Chairman of Study Group 6 the attached questionnaire is published for consideration of the Administrations of Member States, Sector Members and Associates, as appropriate. The Radiocommunication Bureau does not make any engagement nor assume any responsibility with respect to the content of the attachment or any follow-up action as may be required.

Distribution:

- Administrations of Member States of the ITU and Radiocommunication Sector Members participating in the work of Radiocommunication Study Group 6
- ITU-R Associates participating in the work of Radiocommunication Study Group 6
- ITU-R Academia
- Chairman and Vice-Chairmen of Radiocommunication Study Group 6
- Secretary General of the ITU, Director of the Telecommunication Standardization Bureau, Director of the Telecommunication Development Bureau

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:** ngabo@ties.itu.int
Password: (your TIES password)

NOTE - Electronic versions of Annexes 1, 2 & 2 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: FRANCIS NGABO

E-mail address: francis.ngabo@rura.gov.rw **Telephone number:** +250788772488

1 a) What standards have you adopted for digital terrestrial television broadcasting?

Answer: DVB-T2, MPEG-4. However, DTT network deployed prior to 2011 were done using DVB-T, MPEG 4.

b) Have you started introduction of digital terrestrial television services?

Answer: Yes, the process for introduction of digital terrestrial television services started in 2010.

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: The Public Broadcaster Service Provider has deployed 14 multiplexes covering close to 85% of the country. A private Broadcaster has 9 multiplexes

Country	No of multiplexes	System	FEC	GI	Reception mode ¹	Capacity per multiplex (Mb/s)	Current percentage population coverage	Intended percentage population coverage	Content per multiplex
RWANDA	14	DVB-T	2/3	-	Fixed	24 Mb/s	86%	100%	8 SD MPEG2
	9	DVB-T	2/3	-	Fixed	24 Mb/s	20%	100%	16 MPEG4

- 2 a) Have you commenced analogue television switch-off?

Answer: The Simulcast period has started and the Switch-off is planned to be phased and expected to start in June 2013.

- b) If you have any such plans, when do you expect to have completed the analogue switch-off process?

Answer: Depending on the progress of the phased Switch-off, the whole Analogue switch off is planned by December 2013.

- 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: With the absence of the Cable television network and a very limited Satellite Television subscription, it is estimated that close to 10% of households have access to Television services.

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

Answer: Reference to the answer above, it is estimated that the number of Terrestrial Television is close to 10%.

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

- 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: Seven (7) analogue television transmitters around the country with frequencies in the range 694-790 MHz.

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

Answer: 35 Channels are remaining in the Band 470 – 694 MHz.

- 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: Currently the channels in use are 23, but a minimum of 56 channels are 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.

Answer: -

- 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: 14 Channels for Digital Terrestrial Television are in the 694-790 MHz range and after Coordination and re-planning of the GE-06, all assignment will go in the band below 694 MHz.

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

Answer: 35 Channels

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

Answer: No

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

Reply: N/A

- 7 a) Are those frequency bands also shared with secondary services such as PMSE (Programme Making and Special Events), radioastronomy or wind-profile radar?

Answer: No

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

Answer: N/A

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

Answer: Any deployment of Digital Terrestrial network must be in DVB-T2/MPEG4.

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

Answer: Since the DTT Network was installed back in 2010, the simulcast has started and is planned to end with the phased switch off starting in June 2013.

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

Answer: Yes, HD and 3D are planned to be deployed.

- 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: The number and the nature of these services will be decided after enough spectrum has been made available after the implementation of the ITU-R Resolution 232.

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

Answer: Yes, it is expected that more multiplexes will be demanded in the future.

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

Answer: The number and the need for the introduction of new multiplexes will be determined after the full Switch off of Analogue and complete take up of the DTT.

- 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.

Answer : The current number of a minimum of 4 channels per site as recommended during the Kampala and Bamako ATU/ITU workshop was based on SD Television, which amounted to 80 TV program per site. However, some countries are planning to deploy one or two HD for each multiplex. Therefore, it is estimated that in the near future there will be an increasing demand for additional spectrum for DTT.