



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:** (your TIES username)@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: Estonia

For sector members please indicate the geographical area over which you operate:

Contact person: Vladimir Jakovlev

E-mail address: vladimir.jakovlev@tja.ee

Telephone number: +372 6672123

- 1
- a) What standards have you adopted for digital terrestrial television broadcasting?
 - b) Have you started introduction of digital terrestrial television services?
 - 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.

A proposed format for detailed responses is provided in Annex 1.

Reply: See Annex 1

- 2
- a) Have you commenced analogue television switch-off?
 - b) If you have any such plans, when do you expect to have completed the analogue switch-off process?

Reply: Transition to digital terrestrial broadcasting was completed by July 1, 2010

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

Reply: Approx. 20 %

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

Reply: None

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

Reply: DVB-T networks in use are in UHF Band. Use of VHF band is intended in future.

Number of allotments per sub-band according to GE06 Plan is the following:

470-694 MHz - 29

694-790 MHz - 10

790-862 MHz - 6

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

Reply: No

- 7 a) Are those frequency bands also shared with secondary services such as PMSE (Program Making and Special Events), radio astronomy or wind-profile radar?
- b) If yes, please give details of those systems and their spectrum use.

Reply: Yes they are shared with PMSE, mainly wireless microphones and in-ear monitors.

- 8 a) Do you foresee the adoption or expansion of television services broadcast using second-generation systems such as DVB-T2?
- b) If yes, please give indicative details of the planned transition, including any simulcast period.

Reply: The current network architecture (5 multiplexes) is adjusted for fixed reception – high power DVB-T transmitters, SFN, MPEG-4 and SD content. One year ago 1 multiplex was adopted for DVB-T2 network.

- 9 a) Do you foresee a requirement for new and enhanced services, including HD and 3D 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: There is already grow interest of HD and 3D TV programs in cable TV networks and we see the same interest in terrestrial TV transmitted via DVB-T2 networks.

- 10 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: It depends on demand. All multiplexes according to Geneva06 are in operation. Possibility to use SFN networks in the UHF Band (470-694 MHz) gives us extra about 30 local allotments. The expected timeframe for these depends on coordination with the Administrations of neighbor countries.

- 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.

Reply: In UHF band (ch 21-49) we can use for terrestrial television broadcasting 224 MHz. We don't have information or predictions about future needs for terrestrial television.

ANNEX 1

Suggested form of 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.*

The response is shown in table.

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)
EST	1	DVB-T, 16-QAM	¾	1/4	Fixed	15.9	99.9%	99.9%	6 SD MPEG4	128 plus new mux (tbc)	320 in UHF	Free-to-air Public and commercial service multiplex
	2	DVB-T, 64-QAM	¾	1/4	Fixed	22.4	98.0%	98.0%	25 SD MPEG4			Pay-TV service multiplexes
	2	DVB-T, 64-QAM	¾	1/4	Fixed	22.4	90.0%	98.0%	2 SD MPEG4			Pay-TV service multiplexes
	1	[DVB-T2, tbc]	¾	1/4	Fixed	22.6	90,0 %	98.0%	[1-2 HD MPEG4]			Pay-TV service local multiplex
	30	[DVB-T2, tbc]	[tbc]	[tbc]	Fixed	[tbc]	[tbc]	98.0%	[tbc]			[tbc]

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

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