



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.

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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: National Media and Infocommunications Authority

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

Contact person: Maria Kissne-Akli

E-mail address: kissne@nmhh.hu

Telephone number: +36 1 468 0676, mobile: +36 70 332 4453

- 1
- a) What standards have you adopted for digital terrestrial television broadcasting? **DVB-T**
 - b) Have you started introduction of digital terrestrial television services? **Yes**
 - 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:

- 2
- a) Have you commenced analogue television switch-off? **Yes. The ASO was completed on 31 October 2013.**
 - b) If you have any such plans, when do you expect to have completed the analogue switch-off process?-

Reply:

- 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)? **77%**
 - b) If possible, please also provide details of the number or proportion of users who receive television primarily by terrestrial means. **17%**

Reply:

- 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)**). **0**
- b) How many are in the remaining part of the UHF band. **0**

Reply:

- 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. **478-790 MHz band is used and 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)**, **24 allotments according to GE06 Plan** and
- d) How many are in the remaining part of the UHF band.
73 allotments according to GE06 Plan.
470-694 MHz band: 57.
790-862 MHz band: 16

Reply:

- 6 a) Are those frequency bands also shared with other primary services? **No**
- b) If yes, please give details of those systems and their spectrum use.

Reply:

- 7 a) Are those frequency bands also shared with secondary services such as PMSE (Programme Making and Special Events), radio astronomy or wind-profile radar? **Yes**
- b) If yes, please give details of those systems and their spectrum use. **PMSE in band 470-790 MHz**

Reply:

- 8** a) Do you foresee the adoption or expansion of television services broadcast using second-generation systems such as DVB-T2? **There is intention.**
- b) If yes, please give indicative details of the planned transition, including any simulcast period. **No any detailed plan yet.**

Reply:

- 9** a) Do you foresee a requirement for new and enhanced services, including HD and 3D television, on the terrestrial television platform? **Yes**
- b) If yes, please give indicative details of the number and nature of services planned, and if known, the expected timeframe for their introduction. **The demands have not been known for HD or 3D television yet.**

Reply:

- 10** a) Are there plans in your country to launch more multiplexes in the future? **Yes**
- b) If yes, how many more and when? Please also indicate the expected timeframe for their introduction. **Additional two multiplexes in 2014.**

Reply:

- 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. **320 MHz**

If appropriate, a suggested form to express these requirements is shown in Annex 3.

Reply:

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.*

A sample response is shown for guidance only.

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

Country	No of Multiplexes	System & Modulation	FEC	GI	Reception Mode	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 (eg duration of licences)
Hungary	1	DVB-T, 64-QAM	3/4	1/4	fix	22.39	96	96%	3HD, 1 SD MPEG4, 3 digital radio	22.39	320 MHz	Public service multiplexes licensed until 2020
Hungary	1	DVB-T, 64-QAM	3/4	1/4	fix	22.39	96	96%	11 SD MPEG4, 1 digital radio	22.39		licensed until 2020
Hungary	1	DVB-T, 64-QAM	3/4	1/4	fix	22.39	96	96%	13 SD MPEG4	22.39		licensed until 2020
Hungary	2	DVB-T, 64-QAM	3/4	1/4	fix	22.39		96%		44.78	320 MHz	from 2014

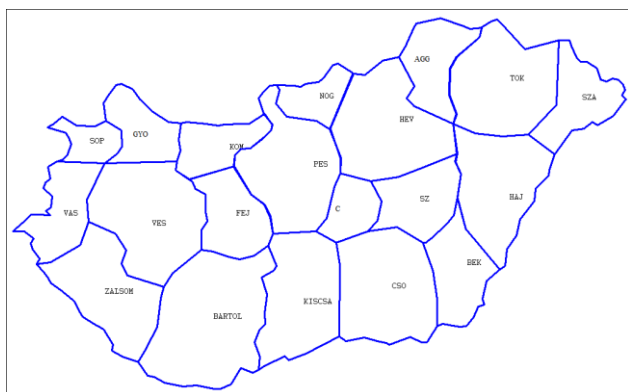
ANNEX 2

Suggested presentation of reply to Question 5: *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.*

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.

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 how many are in the remaining part of the UHF band.



	<i>currently used</i>	<i>intended to be used</i>
ch	yes	yes
ch	no	yes

Comments to the table

allotment	layer 1	layer 2	layer 3	layer 4	layer 5	layer 6
VAS	38	58	49	32	33	X
SOP	42	40	49	32	33	25
GYO	42	35	22	46	51	25
VES	57	35	22	46	51	X
KOM	26	29	59	41	X	X
FEJ	30	29	59	40	43	X
ZALSOM	24	55	54	60	31	41
PES	38	55	58	41	24	34
NOG	38	55	46	36	24	X
HEV	53	39	44	36	56	X
C	53	39	58	36	56	34
SZ	53	30	59	36	56	X
AGG	45	31	28	48	35	X
TOK	43	31	60	26	35	X
SZA	58	24	38	41	34	52
HAI	46	51	49	32	29	40
BEK	23	54	38	37	22	41
CSO	23	26	60	57	22	31
KISCSA	45	25	28	42	27	33
BARTOL	52	37	47	32	50	49

ANNEX 3

Suggested form of presentation of reply to Question 11: *What is the minimum amount of spectrum you foresee that will be required for digital terrestrial television broadcasting in Bands IV & V, 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.*

One example methodology showing how spectrum requirements can be calculated from the different parameters using a set of assumptions can be found in Doc. [6A/59](#) submitted to WP 6A and which is currently under debate in this Working Party.

A sample response is shown for guidance only.

Country	No of multiplexes	System & modulation	FEC	GI	Reception model	Capacity per multiplex (Mb/s)	Intended percentage population coverage	Content per multiplex	Total capacity (Mb/s)	Total spectrum bandwidth needed (MHz) ²	Any additional comments including time frames
HNG	4	DVB-T2, 256-QAM	2/3	1/16	fix	37	96%	4 HD, 6 SD MPEG4	174.2	320	from 2020
	2	DVB-T216-QAM	1/2	1/8	portable	13.1	88%	1 HD, 4 SD MPEG4			from 2020

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

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