



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.y

Name of the Administration/Sector Member: TDF Group

For sector members please indicate the geographical area over which you operate: Region 1, Europe (Finland, France, Germany, Hungary)

The answers below apply to Region 1, France only.

Contact person: A. Lucaussy

E-mail address: Arnaud.lucaussy@tdf.fr

Telephone number: +33 1 55 95 13 28

For France

- 1 a) What standards have you adopted for digital terrestrial television broadcasting? DVB-T, MPEG2/MPEG4, SD/HD, Free to Air and PayTV programs
- 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.

Reply:

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)
France	1	DVB-T, 64-QAM	¾	1/8	Fixed		98.5%	96%	MPEG2 6 SD FTA programs with regional and local programs		320	R1
	1	DVB-T, 64-QAM	¾	1/8	Fixed		98.5%	96%	MPEG2 6 SD FTA programs			R2
	1	DVB-T, 64-QAM	¾	1/8	Fixed		98.5%	96%	HD/SD MPEG4 6 Pay TV programs			R3
	2	DVB-T, 64-QAM	¾	1/8	Fixed		98.5%	96%	HD/SD MPEG2/MPEG4 4 SD Pay TV 7 SD FTA, 1 HD FTA			R4, R6

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

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

									programs			
	3	DVB-T, 64-QAM	$\frac{3}{4}$	1/8	Fixed		98.5%	96.0%	HD MPEG4 9 FTA HD programs			R5, R7,R8
	1	DVB-T, various modulation schemes (QPSK / 16-QAM)	Various	Various	Fixed		Currently 25%	No target, local coverages for local programs	MPEG 2, 1 to 4 SD programs		Included in the previous 320 MHz	

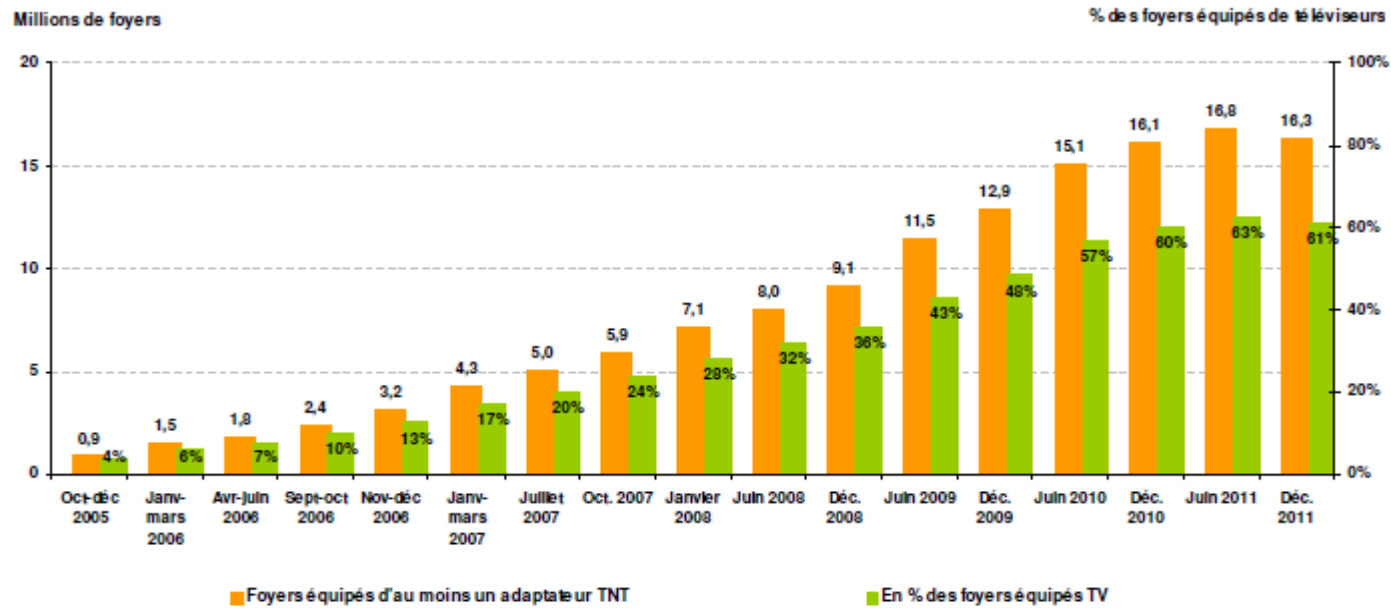
- 2 a) Have you commenced analogue television switch-off?
b) If you have any such plans, when do you expect to have completed the analogue switch-off process?

Reply: The analogue switch-off has been completed in November 2011.

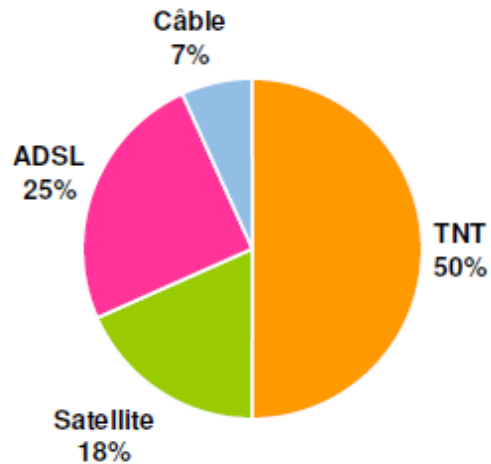
- 3 a) What is the percentage of viewer uptake of terrestrial television in your country, including those whose service provider uses terrestrial broadcast re-transmission (e.g. in cable networks)?
b) If possible, please also provide details of the number or proportion of users who receive television primarily by terrestrial means.

Reply:

According to the CSA (key facts of the audiovisual sector, 1st half 2011), at least 61% of households (ca. 16.3 millions) with a TV receiver have are using a DVB-T receiver (either standalone or integrated).



And 50% of the households depend primarily on terrestrial television for their reception.



- 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: There are no analogue transmitters in operation neither between 694MHz and 790 MHz, neither between 470MHz and 694MHz.

- 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: The CSA plans DTT transmitters between channels 21 and 60. There's no sub-band per multiplex. In the coordination process, different SFNs were established to reach the 8 layers France wanted to achieve.

For the band 694MHz-790MHz, according to the plan, 3895 transmitters over 14157 will be in operation when the latest two DTT muxes will be completely deployed (deployment from December 2012 to October 2014).

- 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: There are no other primary services in the 470-790 MHz band at this stage in France but channel 38 has a specific status and is protected for Radio astronomy usage even if this service has a secondary status according to the RR.

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

Reply: Radio Astronomy will soon use channel 38 in Nançay. PMSE also use the band on an opportunistic approach.

- 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:

- a) DVB-T2 represents the future of the DTT platform.**

The Ministry of Industry has published a report in 2011 stating that DVB-T2 was to be generalised by 2020, but no reglementary measure was taken at this stage. The target was defined but the transition from the current situation towards this target is still to be studied. Different scenarios appear possible according to:

- **the retained coding scheme: MPEG4, HEVC**
- **the evolution of HD to Ultra HDTV,**
- **the numbers of programs to be broadcast in HD/SD and the necessity to maintain simulcast or not**
- **additional services such as HBBTv, audiodescription, multi languages, ...**

The same report also underlined the need to provide mobile reception of DTT programs. Even if mobile TV with DVB-H standard did not succeed, mobility is still to be addressed. With this regard, the terrestrial broadcast networks appear as the better fitted to address those receivers and the DTT platform as the most spectrum efficient to deliver such programs (duplicating linear TV to mobile receivers on each mobile network is clearly not efficient).

Overall, if no decision has been taken yet in France, TDF reminds that more than 50% of households depend on DTT and migration/evolution is a sensitive point that has to be carefully prepared.

- b) The duration for a transition from DVB-T to DVB-T2 will be different from the duration of the transition from analogue to digital TV where there was a clear incentive for the consumer through additional programme content, choice and perceptual quality.**

In addition there were clear benefits for the broadcast industry to enable innovation and competition whilst the enhanced spectrum efficiency achieved through the migration to DTT delivered the digital dividend spectrum to the Mobile Operators for wireless broadband purposes.

No equivalent ‘win-win’ market outcome will be delivered through a future transition from DVB-T to DVB-T2 and as such it is important that the consequences and costs of such a transition, which are likely to be considerably higher than those associated with the clearance of the 800MHz band, be given due consideration taking account of the societal and economical impacts of such a transition to consumers, the content creation industry and the broadcasters. To this end we emphasise the importance of addressing these issues prior to any decision on a future transition from DVB-T to DVB-T2.

- 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:

The terrestrial broadcast platform has for long been putting innovation at work, and should remain one of the privileged places for renewed innovation.

Three years after the DTT launch in France, the introduction of five HD additional programs was decided in 2008. Even if there was some scepticism around this launch, with the evolution of the television sets to HD, it appears now as a must for many or all broadcasters with a perceptual quality clearly ahead of what can be delivered on xDSL networks. The situation was recently (2011) reinforced with the decision to launch 6 additional HD programs, through the R7 and R8 muxes. This example should be carefully analysed when we have to think about the long term evolution of the DTT platform. In this regard, Administrations have the responsibility to allow DTT to take the opportunity of benefitting from the innovation process which doesn't stop with HD.

The manufacturers clearly indicate that the size of the receivers will continue to grow. In order to fulfil consumer needs to have DTT services up to date in order to accommodate these ever growing sizes, and to maintain a fair competition between platforms, the DTT platform should have in the future the possibility to broadcast Ultra HD or 3D. Knowing the current DTT market shares and giving an insight to future trends for the platform, such evolutions will also give perspectives to the industry.

In addition, France Numérique 2020, report from the Ministry already cited clearly indicates that mobility has to be developed.

- 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: Two multiplexes R7 and R8 were just awarded by the CSA and they will start their transmissions on the 12th of December 2012. They are already integrated in the figures in Question 1. Beyond those multiplexes, the question is still open: no plan is established for the time being.

In its conclusions of the consultation on the spectrum resource in June 2010 the CSA indicated (http://www.csa.fr/content/download/13968/275684/file/synthese_consultation_+ressource.pdf) a need for a “two horizons Plan” with a 8 multiplex plan in 2011 and later (2015) a move to 10 or 11 multiplex in line with the “Schéma National de réutilisation des fréquences libérées par l’arrêt de la diffusion analogique” which was signed by the Prime Minister in December 2008.

In addition, the DTT platform will need sufficient spectrum resources to allow the development of the services introduced in Question 9. Moreover, the transition to DVB-T2 may require additional resources to cope with some simulcast period.

- 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.

In the long term, Ultra HD appears as the natural evolution for DTT as the receivers size is continuously growing. Regarding the success of the last call for candidatures of the CSA and the number of programs broadcasted in other countries, new programs may be awarded in the future. In addition, TDF considers that HD 1080p will be generalized.

The migration to DVB-T2 and HEVC will provide room for these developments but we assume that there's still a need for 8 multiplex on the long term to host the different services. In the current discussion on the 700 MHz band, the EC and the national authorities have to realise that the release of the 700MHz band will endanger the future of the terrestrial platform which have been widely adopted by European citizens.

