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EUROPEAN COMMISSION
Information Society and Media Directorate-General
Electronic Communications Policy
Radio Spectrum Policy
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Belgium

Thomson response to European Commission on Digital Dividend

On document "transforming the digital dividend opportunity into social benefits and economic growth in Europe"

Technical preparation under the auspices of the CEPT

Comment:

Concerning the comment made in paragraph 3 " Technical preparation under the auspice of the CEPT", we would like to comment the the statement: One of the important challenges raised in this mandate was to identify technical solutions allowing the co-existence of bidirectional low/medium power networks (e.g. for wireless broadband) and traditional high power broadcasting networks. In its response to the Commission, the CEPT provided all the essential technical elements of such solutions and gave sufficient evidence that the interference management issues can be properly dealt with.

Comparison between broadcast and telecom transmitters should be more detailed. The basic reason of the difference between broadcast and telecom is due to the application itself:

- Point to multipoint transmission can cover a very large area where reception antennas (outside or not far from the window) can be installed for a good signal to noise ratio at reception.
- A point to point transmission limit is given by the number of customers using the cell network at the same time and the maximum output power of the mobile part. The point to point transmission must establish a two way link such as both equipments have the two functions, transmitter and receiver one has a fix position while the second one, the consumer one could be mobile and in door. The consumer mobile product has a limited power due to battery capacity versus life time but also should limit the transmitted power for health reason. This end of the liaison is the limiting factor then for the fix part there is no need for high power transmitter (long distances) if it can't receive the signal of the mobile which is too far away. The average consumer product transmitter output and signal to noise ratio define the

maximum distance where the fix part must be located. Even it can be assumed that the fix is a professional one and can have an optimized signal processing with a very low noise level.

The reference to high power television analog transmitter in France has also an historical explanation because in the past network was organized such as the main high power transmitters were use to deliver the signal over the whole country, starting from the Eiffel tower each one being able to receive the signal from few neighbours on a bi-directional way (star topology with different frequencies) in order to secure the network. Then from this few hundred high power transmitter (>100KW) the signal is relayed by thousands of low and very low power transmitter as shown in figure 1 to distribute the signal to the last home. For several years now the delivery star model is mostly replaced by satellite distribution but the transmitters are still in operation..

With the introduction of digital technology for TV content delivery in France, the multiplex of digital channels are delivered to home using a network of main digital transmitters fed with satellite then a cascade of low and very low power transmitter (combining MFM Multi Frequency Network and SFN Single Frequency Network) such as the signal received by the external antenna or an antenna close by the window receives a good signal allowing a good margin over the noise level. The breakdown of transmitter power for digital delivery is given in figure 2. With the new frequency allocation in France, band I and III are left by television application and will be re-use for other application such as digital radio for band III

Maybe it is a specific issue for France but if frequency is free for broadcaster they have to spend every years a large percentage of their broadcast revenue in content production without any rights which pays every years the salaries of an important amount of person working in the audiovisual sector in France but also over Europe.

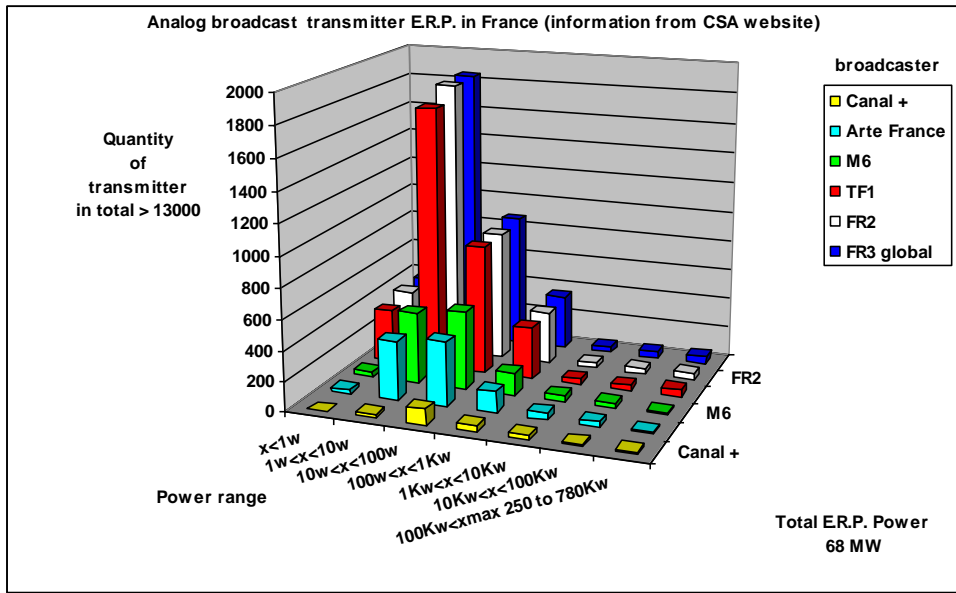


Figure 1 Analog transmitters

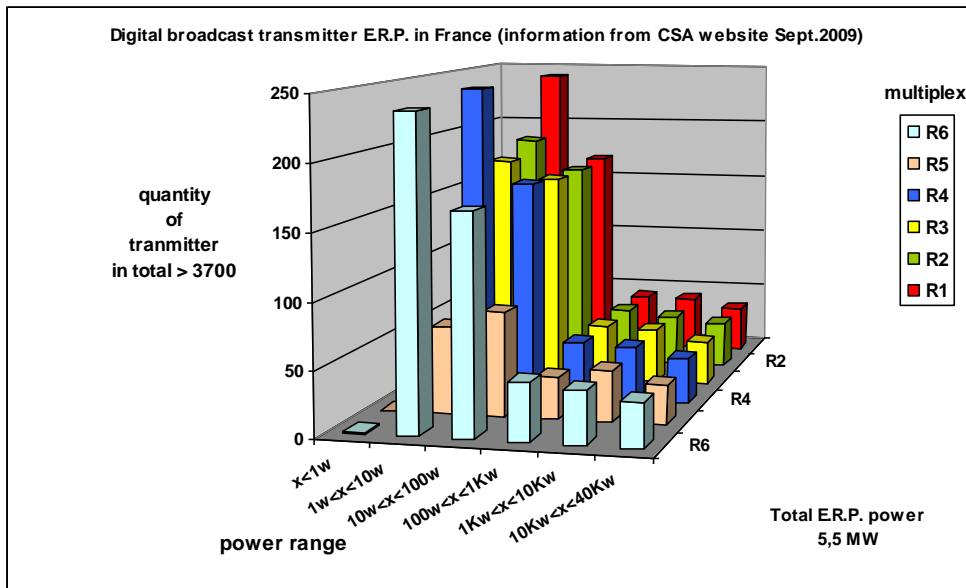


Figure 2 Digital transmitters

The comparison of those two figures shows the huge effort made by the broadcast sector, regulator, equipment manufacturers and broadcaster. To summarize, using the data found on the CSA (Conseil Supérieur de l'Audiovisuel) website:

Transmitter	Analog	Digital
Country coverage	Main broadcaster >97% others >90%	All Mux except R5 >95% R5>85%
Number of channels	6 channels	6 Mux 32 channels including 5HD
Number of transmitters	about 13000	About 3700 (2009)
Very high power	100Kw < 188 transmitters < 780Kw	10KW < 242 transmitters < 39KW
Low and very low power	More than 12000 < 200w	More than 2100 <200w
Total E.R.P.	68MW	5,5MW

The broadcast sector with the digital transition has provided a huge effort, coming from an E.R.P. consumption (equivalent radiated power) of 11,3MW per channel to 0,17MW per channel. The efficiency gain is about 70 times per channel and the ERP average is typically 50w

Even it is rather difficult to find the number and power of the telecom network, for the three networks in France it can be estimated to over 60 000 transmitters with an ERP average of 100 w

With the huge effort made by broadcast industry for several years broadcast industry should keep part of the digital dividend for their own use including new services, HDTV and mobile TV. Provided these needs are totally satisfied, the rest can be reassigned by regulator for other usages.

The Commission intends to rely on the future multi-annual radio spectrum policy programme, as foreseen in the reformed regulatory framework for electronic communications services ¹⁵, which is expected to be adopted by the end of this year, as the main vehicle to achieve the endorsement by the European Parliament and the Council of the most strategic elements of the future EU roadmap concerning the digital dividend.

4.1. Improving consumers' experience by ensuring high quality standards for terrestrial digital television receivers in Europe

Comment:

The migration toward digital technology for broadcasting application is a trend which should not be disturbed. Television media has always faced a very strong competition. Large flat screen display is gaining more and more market share with increasing sales volume per year while prices are reducing. However to feed this screen, broadcasters need to increase the pictures quality and HDTV is today the good answer.

With the starting of such HD services in several countries, broadcasters have learn that competition for quality of content is obviously among themselves but also with HD content coming from DVD HD or from non real time on-line downloading. Those two last new media often use non real time and multi-pass encoding in order to optimize the quality versus data-rate ratio that television can't because of encoding is made in real time at the output of the play-out center. Today the are considered has "the reference"

In most country digital dividend has been evaluated and to guarantee the 1 January 2012 deadline, regulators and commission should promote positive incentive to facilitate migration of the installed base.

Among several others, three measures could be beneficial to realize in due time digital dividend:

- Impose before January 2012 integrated TV - sets (all model, all sizes screen) with MPEG - 4 HD digital decoder to prepare the migration to more efficient of frequency allocation, MPEG-4 is roughly twice efficient than MPEG-2 and an MPEG-4 decoder can decode automatically MPEG-2, HD because the decoder can process an HD signal an transform it into an SD one
- Subsidize for buying a stand alone MPEG-4 HD digital decoder or contribute to finance a new TV set for the elderly people, people of low revenues....
- Prepare later on broadcasters to migrate from MPEG-2 to MPEG-4 and for those which can or are authorized from SD to HD to simultaneously save bandwidth use and improve customers experience

In conclusion with such decision the expected digital dividend at switch-over could be released and probably later on new dividend can be expected.

4.2. Increasing the size of the digital dividend through further spectrum efficiency gains

Comment:

The effort must be shared by both broadcast and telecom industries.

Technology will continue to progress term of better digital usage of frequencies.

- radio transmission, more bit per hertz, more powerful channel coding;
- new network architecture to better address in door access;
- coding efficiency, MPEG-4 full implementation of various features in real time for content;
- security, more powerful error correction; and
- reduced power consumption of the items, green development hardware and software.

All those actions which could induce global better spectrum efficiency could be speed-up by an increase of the European Eureka or Commission pre-competitive sponsored research.

However, the migration towards HD broadcast and mobile TV should be completed before defining any new digital dividend

4.3. Making the 800 MHz band ¹⁸ available for low/medium power electronic communications networks, under harmonised technical conditions, following the principle of technology and service neutrality.

Comment:

The CMR 07 decision for moving the channel 61 to 69 (792MHz to 860 MHz) whose primary assignment was broadcast application to a more open one is certainly a good compromise for the reuse of the available frequencies of the digital dividend. However this decision should not challenge:

- the previous CRR 06 decision which define the number of frequency plan corresponding to full coverage and partial coverage of the country;
- avoid generating incompatible interference level between potential new applications and the ones already in operation e.g. at the television antenna level with the existing generation of TV-sets. If an additional filtering could solve this disturbances it is obvious that polluter pays principle should apply

4.4. Adopting a common position on the potential use of the "white spaces" as part of a possible extension of the digital dividend

Comment:

In order not to block optimum frequency applications possibilities using "white spaces", Member State should keep television as the primary application and the new as secondary one. Then mechanism such as automatic dynamic frequency selection in their devices can be mandatory in order to avoid any disturbances on the television signal.

4.5. Ensuring the continuity and further development of wireless microphone applications and other secondary uses of the UHF spectrum

Comment:

CEPT needs to allocate to wireless microphone applications and other secondary uses, new frequencies with respect to the non disturbance of neighbours rule. A dynamic frequency allocation as on answer 4.4 could also be envisaged.

4. 6. More effective cross-border coordination with non-EU countries

No answer

4.7. Addressing future challenges

Further details on the proposed action lines and how they could be implemented should be defined following a full policy debate regarding the scope and precise nature of the follow-up to be given to these proposals.

Comment:

A periodic close follow-up of the situation should be made and some frequencies should be kept available in case interesting new valuable applications could be proposed in the future. Of course, these new applications will have to respect also the "non disturbance of neighbours" rule.

5.1. Accelerating analogue switch-off by 2012

Member States which have not yet completed the digital switchover would be requested to **reaffirm their commitment to the EU target date for the effective switch-off of analogue TV broadcasting by 1 January 2012**, and to complete all required preparatory measures necessary in 2011 at the latest in order to meet this deadline. Member States would be requested to accelerate the switchover process by **confirming the switch-off date in national law**, if they have not already done so.

Comment:

Member States should respect their commitments and any pro-active decision from the Commission such as those proposed in paragraph 4.1 may contribute to secure this date.

5.2. Taking steps towards the opening of the 800 MHz band for electronic communications services by adopting harmonised technical conditions of use in Europe

The Commission would submit to the Radio Spectrum Committee (RSC) pursuant to the Radio Spectrum Decision ²⁷ a draft EC decision on the technical harmonisation of the 790-862 MHz band for regulatory opinion in autumn 2009, followed by a final adoption by the Commission at the beginning of 2010.

In parallel, it would be recommended to Member States to **refrain from any regulatory action regarding the use of the 800 MHz band** that would contradict, or complicate the application of, the technical harmonisation measure being planned at EU level.

Comment:

Make sure that the full migration scenario is completed up to the final frequency planning according to the CRR 06 agreement which may include boarder negotiation for frequency usage with the neighbouring countries.

Then new regulatory rules concerning this specific frequency band can be proposed at European level. However if technology neutrality at Europe level is a wish, a pragmatic approach is also important to avoid proliferation of standards within the various Member States will be economically detrimental each one having difficulties to reach any critical level.