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The transition from analogue to digital television technology releases a significant amount of high quality radio spectrum which can be made available for new services and technologies: a ‘digital dividend’ that benefits both the broadcasting sector and the wireless communication industry. It has the potential to make a major impact on competitiveness and growth, and provide a wide range of social and cultural benefits. But getting most advantage from this unique opportunity requires a coordinated European strategy.
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Digital Dividend "bonus"

The switchover from analogue to digital terrestrial TV, to be completed in Europe by the end of 2012, frees up a very large amount of radio spectrum. This ‘digital dividend’ provides a unique opportunity to meet the huge demand for new wireless communications services, letting broadcasters significantly expand their services while at the same time providing spectrum for social and economic uses. Applications in this latter category will include broadband applications to help overcome the ‘digital divide’: ensuring equitable access to new information and communication technologies for all the people of Europe.

The digital dividend comes from the ability of digital compression systems to allow up to 8 standard digital TV channels to transmit in the spectrum previously used by one analogue TV channel. That figure is if using the most widely available technologies: the gain will be even more substantial if more advanced standards are introduced (such as DVB-T2 for infrastructure and MPEG-4 for compression).

The spectrum used to broadcast analogue TV, located between 200 MHz and 1 GHz, has very attractive propagation characteristics, and offers an optimal balance between transmission capacity and distance coverage.

Availability of radio spectrum is a clear enabler for economic and social growth: it is estimated that the value of electronic communications services depending on radio spectrum in the EU currently exceeds €250 billion. So it is vital that the next opportunity to provide the much needed wireless bandwidth, the ‘digital dividend’, is managed as efficiently and effectively as possible to ensure the maximum benefit for all.

Current developments

In the Radio Spectrum Policy Programme (RSPP), the Member States and the European Parliament decided to mandate the opening up of the 800 MHz band throughout the EU by 1 January 2013, on the basis of the conditions of use specified in the existing EC Decision to harmonise the 800 MHz band

[1].

By 1 January 2013, Member States shall carry out the authorisation process to allow the use of the 800 MHz band for electronic communications services. The Commission shall grant specific derogations until 31 December 2015 for Member States in which exceptional national or local circumstances or cross-border frequency coordination problems would prevent the availability of the band, acting upon a duly substantiated application from the Member State concerned.

If a Member State's substantiated cross-border frequency coordination problems with one or more countries, including candidate or acceding countries, persist after 31 December 2015 and prevent the availability of the 800 MHz band, the Commission shall grant exceptional derogations on an annual basis until such problems are overcome. Member States to which a derogation has been granted shall ensure that the use of the 800 MHz band does not prevent the availability of that band for electronic communications services other than broadcasting in neighbouring Member States.

The RSPP also establishes an EU inventory of existing uses of spectrum, for both commercial and public purposes. It is expected that further development of the digital dividend policy may be addressed through the process of the spectrum inventory, as suggested by the European Parliament.

On 6 May 2010, the European Commission adopted a Decision to harmonise the 800 MHz band. Commission Decision 2010/267/EU [1] establishes harmonised technical rules for Member States on the allocation of radio frequencies in the 800 MHz band that contribute to the deployment of high-speed wireless internet services by avoiding harmful interference. If Member States decide to change the existing frequency allocation (for broadcasting) to free up the 800 MHz frequencies as part of the "digital dividend", they must immediately apply the harmonised technical rules laid down by the Decision to make these frequencies available to wireless broadband applications.

Preparations towards the Digital Dividend

To help in the process, the Commission adopted a first Communication - COM(2007)700 - which describes the nature and opportunities of the ‘digital dividend’, and demonstrates the added value derived from a common approach at EU level. This would enable economies of scale by establishing the prospect of an internal market. The document proposed a common way forward to ensure efficient and flexible use of the digital dividend spectrum by a wide range of potential applications.

In 2009, the Commission adopted a Recommendation and Communication on the Digital Dividend which set the scene for the implementation in 2010 and the subsequent freeing up of the band for high-speed wireless internet services. The two documents were based on a consultation process which included:

- Input from the Radio Spectrum Policy Group (RSPG), which held a public consultation to prepare its opinion on the digital dividend [2], which already highlighted that the potential of the digital dividend could be hampered if access to spectrum were not better coordinated across Member States. To overcome this risk, it calls for ‘tidying up’ the spectrum of the digital dividend, to make it more usable and more consistent across borders. But this would only be possible if Member States work together, and if EU coordination of spectrum planning for the digital dividend were reinforced.
- Digital Dividend Study: in developing the strategy for the digital dividend, and in particular in elaborating the proposals submitted for public consultation, the Commission was assisted by a large-scale study conducted by Analysys Mason, DotEcon and Hogan & Hartson. This study included wide-ranging consultations and also involved close cooperation with Member States and the RSPG. The goal of the [3]in-depth study [3] was to review all possible technical, organisational and regulatory options, and to evaluate the social and economic impact. More information on this study

can be found on the consultants' website.
- Public Consultation on the Digital Dividend: between July and Sepemteber 2009, the Commission held a public consultation on the digital dividend, to obtain comments and views from all interested stakeholders on the use of the Digital Dividend radio spectrum released through the transition to digital terrestrial television. The consultation outlined proposals being considered as part of the planned EU roadmap, both for short-term action and longer-term policy debate, to assist the Commission in finalising these proposals. The public consultation ended on 4 September 2009 and the list of respondents and their input can be found on the dedicated page on this web site.

Workshops on Cable Networks

During the discussion on the Digital Dividend, the cable network industry raised concerns about potential disturbance between existing cable networks and the new wireless broadband applications operating within the digital dividend. As a consequence, the Commission held two workshops during 2010 to facilitate a common understanding among all stakeholders about the risks involved and possible remedies (further details on the workshops under "more information"). These workshops were organised jointly by DG CNECT and DG ENTR, noting the implications on both equipment standardisation and spectrum policy. As a result of the two workshops and the report from ETSI-CENELEC [4], it is now clear that the risk of interference or disturbance between cable networks and planned mobile networks is manageable. Work has begun to update immunity requirements in the relevant standards [5] issued by ETSI and CENELEC. A list of possible mitigation techniques have been identified that can be applied between now and the availability of equipment in accordance with the revised standards. Consequently, the probability is low that disturbance or interference will actually occur in practice.

Related topics

Spectrum for wireless microphones and events (PMSE) [6]

More information

- Adoption of European Commission Decision 2010/267/EU [1] on harmonised technical conditions of use in the 790-862 MHz frequency band for terrestrial systems capable of providing electronic communications services in the European Union (800 MHz band). See the [7]Press release [7].
- 1st Workshop [8] on Cable TV receivers affected by new radio services in the 800 MHz band, Brussels, 25 January 2010. Links to the studies and presentations: the Netherlands [9], Switzerland [10], Cable Europe [11], Cenelec [12], ETSI [13]. After the workshop, further studies were received from Germany [14], Motorola [15], GSMA [16].
- 2nd Workshop [17] on Cable TV receivers affected by new radio services in the 800 MHz band, Brussels, 30 June 2010. Links to presentations: BNETZA [18], Cable Europe [19], Chairman JWG [20], Philips [21], Vodafone [22]. After the workshop, further studies were received from the Netherlands [23].
- European Commission Communication COM(2009) 586/2 [24] on ‘Transforming the digital dividend into social benefits and economic growth.’
- European Commission Recommendation 2009/848/EC [25] on ‘Facilitating the release of the digital dividend in the European Union.’
- European Commission Communication COM(2007)700 [26] on ‘Reaping the full benefits of the digital dividend in Europe: A common approach to the use of the spectrum released by the digital switchover.’
- Public Consultation [27] ""Transforming the digital dividend opportunity into social benefits and economic growth in Europe"

- RSPG Opinion [28] on the EU Spectrum Policy Implications of the Digital Dividend (RSPG07-161 Final)
- National plans for the switchover to digital TV [29]
- Analysys Mason, DotEcon and Hogan & Hartson awarded digital dividend study by European Commission [30]
- A public presentation of the final results of the study took place in Brussels on Wednesday, 9 September 2009. See details [31]
- Get involved [32]

Tags:

Radio Spectrum Policy [33]
wireless [34]
digital dividend [35]
rspp [36]

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Links
[1] http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:32010D0267:EN:NOT
[2] http://rspg.groups.eu.int/_documents/documents/meeting/rspg20/rspg09_291.pdf
[3] http://ec.europa.eu/digital-agenda/sites/digital-agenda/files/dd_finalreport.pdf
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[18]
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