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COMMUNICATION FROM THE COMMISSION TO THE EUROPEAN PARLIAMENT, THE COUNCIL, THE EUROPEAN ECONOMIC AND SOCIAL COMMITTEE AND THE COMMITTEE OF THE REGIONS

Transforming the digital dividend into social benefits and economic growth

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COMMUNICATION FROM THE COMMISSION TO THE EUROPEAN PARLIAMENT, THE COUNCIL, THE EUROPEAN ECONOMIC AND SOCIAL COMMITTEE AND THE COMMITTEE OF THE REGIONS

Transforming the digital dividend into social benefits and economic growth

(Text with EEA relevance)

TABLE OF CONTENTS

1. IT IS TIME FOR ACTION AT EU LEVEL ON THE DIGITAL DIVIDEND

The switchover from analogue to digital terrestrial TV in Europe will free up highly valuable radio frequencies due do the greater efficiency of digital broadcasting transmission. This 'digital dividend' has great potential for the provision of a wide range of services, as the radio signals in this range travel far and equipment can be easily used indoors. It represents a unique opportunity for Europe to meet the growing demand for radio spectrum, particularly to provide wireless broadband to rural areas, thereby bridging the digital divide, and to stimulate the take-up of new wireless services such as the next generation of mobile broadband, as well as to support the development of terrestrial broadcasting. It can therefore contribute significantly to the Lisbon goals of competitiveness and economic growth and satisfy some of the important social, cultural and economic needs of European citizens.

The digital dividend spectrum[1] will become available throughout Europe within a relatively short space of time, as all Member States should complete the switch-off of analogue TV by 2012 at the latest[2]. It is essential that this window of opportunity is used to ensure an appropriate level of coordination in the European Union to reap the full social and economic benefits possible from access to this spectrum, and to provide a clear EU roadmap for Member States moving ahead at different speeds as a result of differing national circumstances.

In this Communication, therefore, the Commission outlines a set of proposals for a common approach to the digital dividend in Europe, so that immediate progress can be made on the urgent challenges while allowing for adequate preparation for the key strategic and longer-term issues that must be decided together. It builds on the Commission Communication of 2007 on the digital dividend[3], which set out the need for such a common approach, as well as the Council Conclusions[4] and the European Parliament Resolution[5] adopted in response to that initial policy initiative.

The economic crisis has clearly underlined the urgency of moving ahead on these proposals, in particular to make sufficient radio spectrum available for wireless communications. These technologies and services currently represent the most vibrant link in the technological innovation chain, and are essential to achieve further efficiency gains and cost savings in the broader economy. They are thus a key driver for economic recovery.

The Commission has recognised the importance of high-speed broadband infrastructure for many of the developments that are crucial to the transition to a knowledge-intensive, low-carbon digital economy[6]. Already, the Economic Recovery Plan[7], which has been endorsed by the Council, has set a target of 100% broadband coverage to be achieved between 2010 and 2013[8]. In this process, wireless applications have a key role to play, in particular in providing

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1 Arising in the part of the UHF band (470-862 MHz) where most terrestrial broadcasting is transmitted.

2 Five Member States have already switched to digital: Germany, Finland, Luxembourg, Sweden, the Netherlands. Substantial parts of two other Member States have also done so: Belgium and Austria.

3 COM(2007) 700 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'.

4 Council Conclusions, 12 June 2008.

5 European Parliament Resolution, 24 September 2008 [2008/2099(INI)].

6 See for example, COM(2006) 129; Commission Communication on bridging the Broadband Gap.

7 COM(2008) 800; see also *Presidency Conclusions*, European Council, Brussels, 12 December 2008.

8 Competitiveness Council *Key Issues Paper,* March 2009.

wireless broadband services to rural areas where wired infrastructure is impractical, as well as in stimulating the take-up of mobile broadband among all categories of citizens. In practice, the necessary spectrum resources can only be mobilised by giving early access to the digital dividend, as this is the best and largest amount of spectrum that will become effectively available in Europe in the foreseeable future.

The opening of the digital dividend spectrum for different services creates an opportunity particularly for wireless broadband network operators to gain valuable radio spectrum. This would allow for more effective competition in the provision of broadband services.[9]

Increasing spectrum resources will also create new opportunities for innovation. The most obvious opportunities for innovation are in broadcasting, as the digital dividend offers large amounts of spectrum for broadcasters to develop their services. There will also be ample opportunities in service-oriented sectors, providing significant social benefits such as health care, e-learning or e-government, e-accessibility and in areas where small and medium-sized enterprises can take advantage of better access to the economy.

According to a recent Commission study[10], appropriate European coordination of the digital dividend spectrum as a whole, if achieved before 2015, would increase its potential economic impact by an additional EUR 20 to 50 billion over 15 years, depending principally on the actual level of future demand for services such as advanced terrestrial broadcasting and wireless broadband.

Policy makers are now fully aware of the advantage of seizing this opportunity in a time of economic recovery. The debate in Europe on how to create synergies between Member States and how to ensure efficient spectrum coordination has accelerated over the last few months, and it is time to act together without delay.

2. STEPS TOWARDS A COMMON GOAL

2.1. Preparatory steps at EU policy level

Early steps

In 2005 the Commission identified the release of the digital dividend in Europe as a spectrum policy priority, in its Communication on the ITU's Regional Radiocommunication Conference (RRC-06)[11]. The Commission later called for efforts to be made at the World Radiocommunication Conference (WRC-07)[12] to give mobile services the same status as broadcasting services, a goal that was partially achieved[13]. In November 2007, the Commission followed up with a key Communication outlining the need for, and possible approaches to, achieving appropriate EU coordination[14].

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9 The procedures for assignment of radio frequencies should be objective, transparent, non-discriminatory and proportionate to avoid competitive distortions, particularly from uneven spectrum allocation.

10 Commission study 'A European approach to the digital dividend' September 2009, conducted by Analysys Mason, DotEcon and Hogan&Hartson. . http://ec.europa.eu/information_society/policy/ecomm/radio_spectrum/documents/studies/index_en.htm#digitaldividend2009

11 COM(2005) 461 on EU spectrum policy priorities for the digital switchover in the context of the upcoming Regional Radiocommunication Conference 2006 (RRC-06).

12 COM(2007) 371 on the preparation of the World Radio Conference 2007.

13 Several Member States have made use of a mechanism allowing them to use the 790-862 MHz band for mobile communications services, in anticipation of a shared allocation with broadcasting services that will enter into force generally in 2015.

14 COM(2007) 700.

Technical preparation under the auspices of the CEPT

In line with the EU's policy framework, the Commission requested, through a formal mandate, technical input from the Member States' experts in the CEPT[15]. In its response to the Commission, the CEPT provided the essential technical elements necessary for the co-existence of bidirectional low/medium-power networks (e.g. for wireless broadband) and traditional high-power broadcasting networks in the digital dividend spectrum. This led to further preparatory work on the technical harmonisation of the 790-862 MHz sub-band.

Commission study on socio-economic aspects

In order to understand the social and economic impact of the potential uses that can be made of the digital dividend under different scenarios, the Commission conducted a large-scale study to analyse and evaluate the various social and economic aspects by applying appropriate economic models[16]. The results of the study have been a key input in the development of the proposals included in this Communication.

Extensive consultations

The Commission has consulted with a wide range of interested stakeholders in different ways, including stakeholder interviews by consultants, a formal stakeholders' hearing, two dedicated Member State workshops, consultation of the Radio Spectrum Policy Group, and finally a public consultation on the current proposals[17].

2.2. An EU roadmap as a practical way forward

In practical terms, it is proposed to achieve the necessary coordination by agreeing on a common 'EU roadmap' for implementing a set of agreed actions. A large part of these actions should concentrate on further increasing the size and quality of the digital dividend beyond what can be achieved individually by Member States. In addition, the plans need to be sufficiently flexible to accommodate national specificities, especially considering the different legacy situations with respect to terrestrial broadcasting. At the same time, the roadmap should foster long-term convergence between different national approaches, with a view to supporting innovation, benefiting consumers, strengthening the single market, and increasing EU competitiveness.

2.3. Endorsement by the European Parliament and Council

Some of the important choices to be made in terms of EU priorities for the digital dividend are fundamentally of a political nature. Therefore, it will be important for the European Parliament and the Council to be fully involved in both the preparation and the main decisions concerning the strategic parts of the roadmap. The digital dividend spectrum represents a major opportunity to introduce a more flexible spectrum management approach, so the proposals in this Communication will be an important input for the development of a strategic approach to spectrum policy.

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15 Commission mandate to CEPT on technical considerations regarding harmonisation options for the digital dividend in the European Union.

16 More information can be found at http://www.analysysmason.com/EC_digital_dividend_study.

17 Summary available at: http://ec.europa.eu/information_society/policy/ecomm/radio_spectrum/topics/reorg/pubcons_digdiv_200907/index_en.htm.

The Commission intends to rely on the future radio spectrum policy programme, as set out in the draft reform of the regulatory framework for electronic communications[18], which is expected to be adopted in the coming months, as the means to secure endorsement by the European Parliament and the Council of the main strategic elements in the future EU roadmap concerning the digital dividend.

2.4. Moving ahead — the Commission proposals for action

The Commission's proposals, set out below, distinguish clearly between those actions for which considerable support already exists, and which must be taken now to address the immediate policy objectives of economic growth and bridging the digital divide, and to provide clarity to Member States in the vanguard in the switch to digital, and those actions that require discussion and agreement with the European Parliament and Council.

3. URGENT ACTION TO UNLEASH INITIAL BENEFITS

To ensure that the digital dividend can contribute effectively and in a timely manner to the EU's economic recovery efforts, and to maximise consumer benefits, two key actions should be undertaken urgently. The aim is also to prevent the emergence of a fragmented situation among Member States that would hamper the establishment of a single market for services and equipment and the significant economies of scale that this represents, without prejudging the outstanding strategic policy decisions that should be taken by the European Parliament and the Council. These urgent actions are the subject of the Commission Recommendation 'Facilitating the release of the digital dividend in the European Union'[19].

3.1. Achieving complete switch-off of analogue TV by 2012

The strategic decision to phase out analogue broadcasting has already been taken, but, despite previous political commitments to the EU target date of 2012, the actual date for complete switch-off in Europe remains uncertain. As the digital dividend will only become fully available after the switch-off of analogue broadcasting, it is crucial to ensure the timely completion of this process in all Member States.

Member States which have not yet completed the digital switchover are requested to reaffirm their commitment to the effective switch-off of analogue TV broadcasting by accepting an EU target date of 1 January 2012, and to complete all the necessary preparatory measures.

3.2. Providing a template for coherent opening of the 790-862 MHz sub-band for electronic communications services by adopting harmonised technical conditions of use

A number of Member States[20] are already, or will be shortly, in a position to decide to open the 790-862 MHz sub-band to electronic communications services. Given that Member States are under increasing pressure to take action, failure to provide a Community template for a

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18 Article 8a(3) (provisional numbering) of the draft revised Framework Directive.

19 Commission Recommendation adopted in conjunction with this Communication.

20 At the last count: Austria, the Czech Republic, Finland, France, Germany, Spain, Sweden, the Netherlands and the United Kingdom.

coordinated approach as a matter of urgency would risk fragmentation in the internal market and loss of the economies of scale that might otherwise be obtained.

The Commission intends to submit to the Radio Spectrum Committee (RSC) pursuant to the Radio Spectrum Decision[21] a draft EC decision on the technical harmonisation of the 790-862 MHz sub-band for regulatory opinion by the end of 2009. The decision would not oblige a Member State to open the sub-band for new uses other than broadcasting uses, but if and when a Member State so decides, it would then have to follow the common technical parameters.

This is in line with the position of the Radio Spectrum Policy Group (RSPG), set out in detail in its Opinion on the digital dividend[22], which recommends that the Commission act swiftly to support the availability of the upper part of the digital dividend (790-862 MHz sub-band) on a neutral basis for electronic communications services. The RSPG further advises that the Commission should make its final proposal regarding this sub-band at the latest by 31 October 2009 in order to give sufficient time to stakeholders to plan investments and complete the necessary technical preparation before the actual analogue switch-off in 2012[23].

It is essential that Member States support regulatory efforts towards harmonised conditions of use of the 790-862 MHz sub-band and refrain from any action that would hinder the application of the technical harmonisation measure being planned at EU level.

The necessary technical preparations for making the sub-band available should include appropriate arrangements to avoid disruption to existing services and the operation of equipment.

4. MEASURES REQUIRING A STRATEGIC DECISION

Certain measures necessary to reap the full benefits of the digital dividend involve important political rather than technical choices, and therefore require that the European Parliament and the Council are fully involved in setting the required strategic orientations. This can be achieved through the framework provided by the forthcoming spectrum policy programme that should also be an integral part of the future European Digital Agenda[24].

4.1. Adoption of a common EU position with a view to more effective cross-border coordination with non-EU countries

The future use of the UHF band in third countries bordering the EU is of fundamental importance as it will influence the way the digital dividend can be used in Member States affected by cross-border interference. It will also influence other Member States through a 'knock-on' effect. Action by neighbouring third countries will also have an impact in terms of

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21 Decision No 676/2002/EC of the European Parliament and of the Council of 7 March 2002 on a regulatory framework for radio spectrum policy in the European Community.

22 RSPG Opinion on the digital dividend, 18 September 2009. http://rspg.groups.eu.int/rspg_opinions/index_en.htm

23 This includes coordination to free the sub-band of its current use for high-power broadcasting and to organise its assignment so as to ensure proper conditions conducive to innovative uses, such as wireless broadband.

24 See President J.M. Barroso (2009) "*Political Guidelines for the Next Commission*" http://ec.europa.eu/commission_barroso/president/pdf/press_20090903_EN.pdf

the economies of scale and scope that can be achieved in the wider region with regard to future innovative services.

Against this background, the forthcoming World Radio Conference (WRC) in early 2012 will be decisive in terms of influencing future strategic directions to be taken in third countries. It is therefore important that Member States show commitment to the digital dividend policy at international level by defending a common EU position on key objectives.

The adoption of a common EU position on key aspects of the digital dividend for the WRC negotiations, supported by the European Parliament and Council, would greatly improve the EU's effectiveness in ensuring support for its standpoint.

In addition, the Commission could provide assistance to Member States in their negotiations with non-EU countries on a bilateral or multilateral basis[25].

4.2. Achieving the EU-wide opening of the 790-862 MHz sub-band to electronic communications services

The Commission study analysed how economic outcomes and costs/benefits vary under a combination of scenarios for spectrum supply and demand[26] over a period of 15 years, starting in 2012. This showed that opening up one part of the digital dividend — the 790-862 MHz sub-band — to wireless broadband services by 2015, in all Member States and under common conditions of use, would generate an added value[27] compared to individual national initiatives of at least EUR 17 billion and up to EUR 44 billion depending on the pace of development of wireless broadband services in this sub-band[28].

For this reason, the study identified the opening of the 790-862 MHz sub-band, which is already under consideration in several Member States, as the most pragmatic way to gain immediate benefits from the digital dividend. It is also why the Commission is proposing to adopt an urgent technical measure on that particular sub-band. However, this technical harmonisation decision will not oblige Member States to withdraw high-power broadcasting transmitters or to open up the sub-band to electronic communications services, due to the need to take account of the differing situations regarding terrestrial broadcasting in the Member States.

To realise the full benefits of EU harmonisation, the Commission could propose to the European Parliament and Council that Member States cease using the 790-862 MHz sub-band for high-power broadcasting services and fully implement the EU technical harmonisation decision by a certain date to be agreed at EU level.

Another benefit of setting a deadline for making the sub-band available to new services is that it would avoid a situation where Member States that have not cleared the sub-band of

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25 See also the RSPG Opinion on 'Spectrum issues at outer EU borders', RSPG08-232 19 June 2008. http://rspg.ec.europa.eu/_documents/documents/meeting/rspg16/rspg08232_finalopinion_outereuborders.pdf

26 Three spectrum supply and six spectrum demand scenarios (with varying forecasts for demand for broadcasting and wireless broadband services over time) were compared to a reference scenario representing the outcome in the absence of European-level coordination.

27 Net incremental private value (net present value accrued over 15 years).

28 These figures represent part of the estimated incremental value of coordinated EU action in the whole digital dividend spectrum — for broadcasting and wireless broadband — referred to in Chapter 1. Details can be found in the Impact Assessment document, Section 5.4.

broadcasting transmissions hinder the effective deployment of new services in others due to cross-border interference, thus preventing full coverage of wireless broadband applications.

4.3. Applying a minimum level of spectrum efficiency regarding future uses of the digital dividend

Digital dividend spectrum is a scarce and valuable public resource serving cultural, economic and social needs. Therefore it is important that all potential users have an incentive to ensure its efficient use, although it must be borne in mind that this may entail additional costs for investing in efficient technologies. This process could be greatly facilitated by agreeing on a minimum level for the efficient use of spectrum to be reached by any user of the digital dividend.

To ensure that the best possible use is made of the digital dividend, and to create a coherent framework for specific technical measures on spectrum efficiency, common minimum requirements for the efficient use of the digital dividend across all applications could be adopted at EU level.

In these times of severe financial constraints, achieving this goal will require a clear political commitment, to convince all interested parties of the collective advantage of such an initiative, as well as a clear plan for implementation.

5. LOOKING FORWARD TO FURTHER IMPROVEMENTS IN THE USE OF THE DIGITAL DIVIDEND

Dealing with the evolving nature of the digital dividend is a 'dynamic' process: developments in technology, services, market demand and societal requirements will require the actions established under the roadmap to evolve in parallel. Besides the urgent and strategic actions that are presented above, there are also more forward-looking initiatives that could lead to further increases in the potential size and usability of the digital dividend in the long term. The additional capacity that could be obtained would allow the EU to face up to future challenges, such as a sudden increase in demand for spectrum for new, and by definition unforeseen, applications. The long spectrum planning cycles demand that such initiatives be agreed well before they produce effects (typically 5 to 10 years ahead), and be preceded by an appropriate impact assessment as well as an analysis of their potential competitive impact.

Among the most promising initiatives identified in the Commission study are:

(1) **Promoting collaboration between Member States to share future broadcasting network deployment plans (e.g. migration to MPEG-4 or DVB-T2).** EU cooperation could aim to set target dates for the migration of networks to more spectrum-efficient standards and to produce common guidelines for implementation.

(2) **Requiring that all digital TV receivers sold in the EU after a certain date (to be defined) are ready to operate with a digital transmission compression standard of the new generation such as the H264/MPEG-4 AVC standard.** Such equipment would also have to be 'backward compatible' with older standards to ensure continued reception of transmissions using the legacy standards. Such an ambitious measure, already pioneered in France and planned in Spain, would generate a critical mass of high-performance TV equipment in Europe and accelerate the deployment of the related network infrastructures.

(3) **Setting a minimum standard for the ability of digital TV receivers to resist interference (immunity to interference).** Equipment manufacturers and operators have been addressing for some time the need to ensure that electronic communications terminals and television receivers do not interfere with each other. While the technical parameters governing the use of part of the UHF band for wireless communications will prevent harmful interference to TV signals, a minimum standard for the ability of receivers to resist possible interference will guarantee a better quality of reception for consumers as well as reduce the cost of any interference protection measures that may be required of equipment operating in adjacent frequency bands.

(4) **Considering wider deployment of Single Frequency Networks (SFNs).** These networks are significantly more spectrum-efficient as they can cover larger geographical areas without changing carrier frequencies, but their actual performance still needs to be assessed in practice. Member States could be requested to exchange their experiences with SFN deployment, with the assistance of the Radio Spectrum Committee to gather and assess the information.

(5) **Supporting research into 'frequency-agile' mobile communications systems.** The development of such systems would require significant investments that are very challenging for individual manufacturers, but which could probably be achieved on a cooperative basis, possibly using Community funding.

(6) **Ensuring the continuity of wireless microphone and similar applications by identifying future harmonised frequencies**. The objective would be to determine the best strategy to ensure an efficient 'migration path' for current users and producers of devices using the respective frequency bands, and could include further technical work by the CEPT[29] under a mandate from the European Commission.

(7) **Adopting a common position on the potential use of the 'white spaces' as a possible digital dividend.** Member States would be invited to cooperate with the Commission in examining the possibility of opening up the 'white spaces', or interleaved spectrum unused between broadcasting coverage areas, for use by cognitive radio equipment[30] on the basis of a common set of technical requirements in Europe.

6. CONCLUSION

The Commission invites the European Parliament and the Council to give their views on these policy proposals for a coordinated approach to the digital dividend. After having taken due account of the input from both institutions, the Commission intends to integrate elements of the proposals into the wider spectrum action programme to be submitted in 2010 to the European Parliament and the Council for adoption.

In addition, and as a matter of urgency, the Commission will submit to the Radio Spectrum Committee for regulatory opinion its proposal for the technical harmonisation of the 790-862 MHz sub-band for electronic communications services.

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[29] European Conference of Postal and Telecommunications Administrations.

[30] Cognitive radio technologies allow radio equipment to identify frequencies that are not occupied by a primary user at a given moment, and to exploit them temporarily.

Finally, Member States will also be invited to report to the Commission, by mid-2010, on the progress made towards the timely switch-off of analogue broadcasting.