



## **Consultation document**

### **Transforming the digital dividend opportunity into social benefits and economic growth in Europe**

**10 July 2009**

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This consultation document does not necessarily represent  
the official position of the European Commission

## **1. A UNIQUE OPPORTUNITY TO CONTRIBUTE TO ECONOMIC RECOVERY**

The digital dividend is a unique opportunity for Europe to meet the growing demand for radio spectrum, particularly to allow new wireless services such as the next generation of mobile broadband, as well as to support the continuous development of terrestrial broadcasting. It can therefore significantly contribute to the Lisbon goals of competitiveness and economic growth and satisfy some of the important social, cultural and economic needs for the benefit of European citizens.

The digital dividend has a strong European dimension as virtually all its potential uses are mass market consumer applications which will only become a reality if economies of scale and the other internal market benefits can be achieved.

The current economic crisis has underlined the urgency of making sufficient radio spectrum available for wireless communications, which currently represent the most vibrant link in the technological innovation chain. They are essential to creating further efficiency gains in the broader economy and are thus a key driver for economic recovery. For this reason, the Economic Recovery Plan<sup>1</sup> has set a target of 100% broadband coverage by between 2010 and 2013<sup>2</sup>. This cannot be achieved without a significant role being played by wireless infrastructures, including in the provision of broadband to rural areas, part of which can only be done by giving early access to the digital dividend.

Recognising this urgency, several Member States have recently stepped up their efforts to develop full broadband access. Coming on top of the Commission's efforts to raise awareness of the economic and social importance of the digital dividend, these initiatives recognise the potential of wireless broadband to achieve rapid results, provided that adequate spectrum resources in terms of quantity and quality can be made available. This has had the effect of accelerating the debate in Europe on how to create synergies between Member States and how to ensure efficient spectrum coordination.

In the light of these recent developments, and with the prospect of EU transition to digital TV being completed by 2012<sup>3</sup>, it is time now to take concrete steps towards a common approach to the use of the digital dividend in Europe. This consultation document outlines a set of action lines under consideration in order to meet both short term as well as medium to long term objectives. It also proposes an overall EU roadmap according to which these action lines can be further considered on the way to achieving this common approach,

## **2. WHAT HAS BEEN ACHIEVED SO FAR?**

### ***Initial preparatory steps at EU policy level***

The first formal Commission policy initiative on this issue dates back to 2005, when the Commission had identified the release of the digital dividend in Europe, under flexible conditions of use, as a spectrum policy priority in its Communication on the ITU's Regional

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<sup>1</sup> *Presidency Conclusions*, Council of the European Union, Brussels, 12 December 2008 17271/08.

<sup>2</sup> Endorsed by the Council: Competitiveness Council *Key Issues Paper*, March 2009.

<sup>3</sup> COM(2005) 204 — Communication on “Accelerating the transition from analogue to digital broadcasting”.

Radiocommunication Conference (RRC-06)<sup>4</sup>. The Commission later called for efforts to be made at the World Radiocommunication Conference (WRC-07)<sup>5</sup>, to give mobile services the same status as broadcasting services. In November 2007, the Commission followed up with a comprehensive Communication which outlined the need, and possible approaches, for achieving appropriate EU coordination<sup>6</sup>. Both the Council<sup>7</sup> and the European Parliament<sup>8</sup> recognised the validity of the main objectives proposed by the Commission in their respective response to this Communication. Finally, the Radio Spectrum Policy Group has identified the need to ensure appropriate coordination between Member States and called for swift action on this matter.

### ***Study on socio-economic aspects***

In order to identify the most appropriate strategy from an overall EU perspective, it was necessary to understand the social and economic impact of the potential uses that can be made of the digital dividend under different scenarios. Therefore, the Commission conducted a large scale study<sup>9</sup> to analyse and evaluate the various social and economic aspects through the application of appropriate economic models<sup>10</sup>. Where relevant, the study has also provided an assessment of the added value of the possible types of coordinated action at EU-level. The study has provided draft recommendations to the Commission which have been used as a key input for the preparation of most of the proposals included in this consultation document. The study will also assist in conducting the appropriate impact assessment work for each of the main proposals finally retained by the Commission.

### ***Extensive consultations with main interested constituencies***

The Commission has consulted with a wide range of interested stakeholders (both current and potential users) through different channels including bi-lateral consultations between the study team and individual stakeholder, a formal stakeholders' hearing by Commission services<sup>11</sup> and two dedicated Member States workshops<sup>12</sup>. The input from the consultations also constituted a major input to the Commission study.

### ***Technical preparation under the auspices of the CEPT***

In line with the EU's policy framework, and to ensure a co-ordinated approach to spectrum management, the Commission requested technical input from the Member States' experts in

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<sup>4</sup> COM(2005) 461 on EU spectrum policy priorities for the digital switchover in the context of the upcoming ITU Regional Radiocommunication Conference 2006 (RRC-06).

<sup>5</sup> COM(2007) 371 on the preparation of the World Radio Conference 2007.

<sup>6</sup> 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".

<sup>7</sup> Council Conclusions 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" 2877th TRANSPORT, TELECOMMUNICATIONS AND ENERGY Council meeting, Luxembourg, 12 June 2008.

<sup>8</sup> European Parliament Resolution of 24 September 2008 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 [2008/2099(INI)].

<sup>9</sup> Commission study "A European approach to the digital dividend" launched on 15 November 2008, conducted by Analysys Mason, DotEcon and Hogan&Hartson.

<sup>10</sup> More information about the study can be found at [http://www.analysysmason.com/EC\\_digital\\_dividend\\_study](http://www.analysysmason.com/EC_digital_dividend_study)

<sup>11</sup> Commission hearing of stakeholders on 13 March 2009.

<sup>12</sup> Dedicated Member States' workshops on 15 April and 28 June 2009.

the CEPT<sup>13</sup>. 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. This was an important step and a major contribution to the preparation of the policy initiative on which the Commission is now consulting.

### ***Introducing more flexible spectrum management***

The European Parliament and the Council are expected to adopt the reformed regulatory framework for electronic communications services by the end of this year. This framework includes provisions to introduce greater flexibility in the use of spectrum, in order to adapt to evolving consumer demand and future changes in the technological landscape. As it becomes available, the digital dividend spectrum presents an opportunity to introduce a more flexible spectrum management approach giving Europe a competitive edge over other regions.

In light of these developments, the Commission considers that all the necessary elements are now available to allow concrete proposals to be made on the way forward.

## **3. A COMMON WAY FORWARD: TOWARDS AN EU ROADMAP**

### ***Benefits of a common way forward on the digital dividend***

According to the Commission study<sup>14</sup>, appropriate European coordination would increase the potential economic impact of the digital dividend by an additional EUR 20 to 50 billion between now and 2015, as compared to individual national plans. In the longer term, beyond 2015, further benefits of EUR 30 billion could be realised through continued EU coordination. All evidence suggests that there would also be an overall positive impact on social benefits, albeit more difficult to quantify.

### ***An EU roadmap as a practical way forward***

In practical terms, the necessary coordination could be achieved by agreeing on a shared "EU roadmap" which would define the process and key deadlines for implementing a set of strategic actions to be undertaken together at EU level. A large part of these strategic actions should concentrate on further increasing the size and the quality of the digital dividend beyond what can be achieved individually by Member States. It should also ensure a higher degree of consistency between Member States regarding the most important technical issues regarding network deployment.

### ***An EU roadmap must offer sufficient flexibility***

Flexibility in any future roadmap is needed to cope with national specificities, especially considering the different legacies and future needs with respect to terrestrial broadcasting. At

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<sup>13</sup> Commission mandate to CEPT on technical considerations regarding harmonisation options for the digital dividend in the European Union.

<sup>14</sup> A copy of the slides presented by the consultants at the second Member States workshop on 26 June 2009 is available at: <http://www.analysismason.com/Consulting/Services/Strategy-consulting/Regulation-and-policy-development/Spectrum-management/Digital-dividend/Exploiting-the-digital-dividend--a-European-approach/Materials-from-the-member-States-workshop>

the same time, the roadmap should foster the long term convergence between Member States, with a view of supporting innovation and benefits for consumers, strengthening the single market, and increasing EU competitiveness. The roadmap should therefore not be more prescriptive than strictly necessary to achieve the main objectives.

### ***Endorsement of the roadmap by the European Parliament and Council***

Some of the important choices to be made in terms of priorities for a future EU roadmap are fundamentally of a political nature. Therefore, it will be important that the European Parliament and the Council be fully involved in both the preparation and the main decisions concerning the strategic parts of the roadmap.

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<sup>15</sup>, 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.

By so doing, the EU roadmap would carry sufficient political weight to produce its full effect. It should also have a significant positive impact on investment by ending a period of relative uncertainty from an EU perspective, and will contribute to the EU efforts for economic recovery.

### ***Need for moving ahead immediately with two urgent actions***

The Commission has identified two actions which should be undertaken without delay to secure consumer benefits and ensure that they can contribute timely to the economic recovery. These actions described in section 5, relate to objectives which already enjoy a high degree of consensus and political support, and which should not wait for the establishment of the multi-annual radio spectrum policy programme.

## **4. PROPOSED ELEMENTS FOR A ROADMAP**

The main actions lines which are currently under consideration are outlined below.

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

Consumers have high expectations regarding future developments of broadcasting services, be it more programmes, increased quality such as HDTV<sup>16</sup>, or mobile reception. A coordinated move in Europe could greatly facilitate the migration to more efficient and more versatile terrestrial broadcasting systems, which in turn would allow more data to be transmitted over the same amount of spectrum, and eventually improve the consumers' experience.

The study on the digital dividend concludes that the benefits for Europe to increase the minimum standards for digital compression capacity on the terrestrial broadcasting platform would outweigh the costs by EUR 4 billion to EUR 10 billion.

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<sup>15</sup> Article 8a. paragraph 3 of the proposed reformed Framework Directive.

<sup>16</sup> High Definition Television.

Consequently, the two following actions are considered a priority:

- a. **Ensuring the availability of a compression standard on all DTT receivers<sup>17</sup> sold after 1 January 2012 that is at least as efficient as the H264/MPEG-4 AVC standard.** This requirement should not be exclusive and should allow co-existence with other standards, among others to ensure backward compatibility with older standards. This measure would generate a critical mass of high quality TV equipment in Europe, in advance of the deployment of the related network infrastructure that will make full use of this increased transmission capacity. Taking into account an average renewal time frame for set-top boxes and TV sets of 5 to 8 years, such a coordinated move would also alleviate the typical "chicken and egg" issue that is encountered when Member States are migrating from the first generation of digital broadcasting networks to a more advanced one.
- b. **Setting standards for the ability of digital TV receivers to resist interference.** This could be achieved through a close cooperation of Member States in the context of equipment standardisation (CENELEC). A minimum quality of reception would improve the consumer experience as well as reduce the cost of other interference protection measures which would be required on future equipment operating in adjacent frequency bands. It is important that any such minimum requirements be consistent at EU level in order not to create undue barriers in the single market for such equipment.

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

The Commission study concluded that a significant part of the total potential spectrum efficiency gains could be achieved economically if the following initiatives were agreed and implemented with the appropriate level of EU coordination:

- a. **Promoting collaboration between Member States to share future broadcasting network deployment plans (e.g. migration to MPEG-4 or DVB-T2).** This initiative would be complementary to the actions proposed in section 4.1. and would aim at fostering cooperation between Member States committed to future target dates for migration to more spectral efficiency standards by actually upgrading networks. The Commission would act as a facilitator and produce guidelines.
- b. **Encouraging the deployment of Single Frequency Networks (SFNs) over Multiple Frequency Networks (MFNs).** This could include considerations to migrate progressively to lower power/higher density broadcasting network topologies. As this approach may require very significant investments, which could exceed benefits in many Member States, the proposed action would be limited to requiring Member States to exchange experience of SFN deployment with the assistance of the radio Spectrum Committee to gather and assess the information.
- c. **Supporting research into "frequency agile" mobile communications systems.** Such systems could greatly simplify spectrum coordination, increase efficient use of spectrum, and allow for simpler transitional arrangements in the future. The development of such systems would however require significant investments that are very challenging to individual manufacturers but could probably be achieved on a cooperative basis, particularly if Community research funding would be made available to contribute to this goal.

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<sup>17</sup> Digital Terrestrial Television (DTT) receivers, such as TV sets, set-top boxes and other similar receiving devices.

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

The Commission study analysed how economic outcomes and costs/benefits vary under a combination of scenarios (with varying forecasts for demand for broadcasting and wireless broadband services over time<sup>19</sup>) for spectrum supply and demand<sup>20</sup>. This exercise showed, depending on the scenario that was examined, that opening up the digital dividend to wireless broadband services creates a value<sup>21</sup> of anywhere between EUR 3 billion and EUR 97 billion.

At present, the study identifies the opening of the **790-862 MHz band**, which is already under consideration in several Member States<sup>22</sup>, as **the most pragmatic way forward** to optimise the impact of the digital dividend. This is why the Commission is proposing to take **immediate action on this particular band** (please also refer to section 5). EU harmonisation would allow greater economies of scale and ensure that there is no fragmentation between Member States regarding the technical conditions of use.

**Member States would be requested to implement the measure as soon as possible but no final implementation date would be specified in the technical harmonisation measure; instead, the measure would ensure that any Member State developing its spectrum planning beyond the current broadcasting use would do so in accordance with the technical parameters of the Decision. In the long transitional period to be anticipated, it would also provide technical parameters for co-ordination between Member States that continue with high-power broadcasting in the band and those that move to medium to low-power electronic communications usage.**

This is in line with the position of the Radio Spectrum Policy Group (RSPG), set out in detail in its (draft) Opinion on the digital dividend<sup>23</sup>, which recommends that the Commission act swiftly to support the availability of the upper part of the digital dividend (790-862 MHz band) on a neutral basis for electronic communications services. The RSPG further advises that the Commission make its final proposal regarding this 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 availability of the band following analogue switch-off in 2012<sup>24</sup>.

In order to optimise the potential impact of the 800 MHz band, and after further investigations, the **Commission may still consider proposing a final date for implementation beyond which the measure would have to be implemented by those Member States that have not already done so, in the context of strategic discussions on**

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<sup>18</sup> 790-862 MHz.

<sup>19</sup> Net incremental private value accrued over 15 years. The study found no evidence to suggest that the inclusion of external value would alter these high level results.

<sup>20</sup> Three spectrum supply and six spectrum demand scenarios were compared to a reference scenario representing the outcome in absence of European-level coordination.

<sup>21</sup> Incremental private value.

<sup>22</sup> The so-called 800 MHz band. At the latest count: Austria, the Czech Republic, Finland, France, Germany, Spain, Sweden, the Netherlands and the United Kingdom.

<sup>23</sup> Draft Opinion on the digital dividend available at:  
[http://rspg.ec.europa.eu/documents/documents/meeting/rspg19/rspg09\\_272\\_draft\\_opinion\\_digitaldividend.pdf](http://rspg.ec.europa.eu/documents/documents/meeting/rspg19/rspg09_272_draft_opinion_digitaldividend.pdf)

<sup>24</sup> This technical preparation includes coordination to free the band from current high power broadcasting use and to organise the award of the band as to ensure proper competition and conditions conducive to innovative uses such as wireless broadband.

the development and implementation of the roadmap in to the context of the multi-annual spectrum policy programme.

As a secondary measure, and in absence of a more generic allocation of the UHF band in the ITU, Member States could also be requested to show commitment to the digital dividend policy at international level by adhering to footnote 5.316 of the ITU Radio Regulations, which allocates the band 790–862 MHz to the mobile service on a co-primary basis (except aeronautical mobile). Those Member States which are not yet associated with this footnote would be requested to do so at the forthcoming WRC-11.

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

Member States would be invited to cooperate with the Commission in examining whether there are grounds for opening up the "white spaces", or interleaved spectrum unused between broadcasting coverage areas, for use by cognitive radio equipment on the basis of a common set of technical requirements in Europe. If so, consideration could also be given to developing a coordinated approach to the regulatory treatment of usage rights for white spaces.

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

The objective would be to determine the best strategy to ensure a "migration path" for current secondary users of the UHF spectrum (wireless microphones and similar applications). This work could include an examination at EU level including, if appropriate, a mandate from the European Commission to the CEPT. This work could lead to specific spectrum harmonisation measures, inside or outside the scope of the digital dividend, for such secondary uses in the future, in particular those of a mass market/consumer nature.

#### **4.6. More effective cross-border coordination with non-EU countries**

According to this proposal, the Commission could make itself available to provide assistance to Member States in their negotiations with non-EU countries on a bilateral or multilateral basis<sup>25</sup>. The need for further action in this domain should be examined as early as possible, given the long negotiation cycles in the area of international spectrum coordination and with a view to adopting a common position at the forthcoming WRC-11.

#### **4.7. Addressing future challenges**

Dealing with the evolving nature of the digital dividend issue is a "dynamic" process. Developments in technology, services, market demand and societal requirements will require that the actions established under the roadmap evolve in parallel. Particularly relevant factors of uncertainty which have been identified are:

- the extent of consumer take-up of HDTV on the terrestrial platform in the future, compared to the take-up on other platforms such as satellite and IPTV on broadband networks (in particular in an NGA context);

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<sup>25</sup> Please refer also to the RSPG Opinion on "Spectrum issues at outer EU borders", RSPG08-232 adopted on 19 June 2008.



- a higher growth of broadband wireless usage leading to a spectrum bottleneck<sup>26</sup>;
- the emergence of unforeseen additional broadband uses which would require access to more spectrum below 1 GHz, for example public service uses such as Public Protection and Disaster Recovery (PPDR) or public security;
- the pace of introduction of new technologies: new transmission compression standards, new frequency agile technologies and their ability to take advantage of the white spaces;
- the possibility to create synergies with other regions of the world in the light of not foregoing the chance to benefit from potentially world-wide economies of scale.

The Commission proposes to establish a mechanism to monitor external developments affecting the roadmap. The Commission would report on any need for its review to the European Parliament and Council at least once every two to three years. This reporting would include changes in forecasts for spectrum demand and identify any future need for making further spectrum available on a co-ordinated basis.

**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.**

## 5. URGENT ACTIONS

This section introduces two urgent actions that should be undertaken without delay in order to secure consumer benefits and ensure that the digital dividend can contribute effectively and in a timely manner to the EU economic recovery efforts, in anticipation of an EU roadmap. They should also prevent the emergence of fragmented national legacy situations which would hamper the establishment of a single market for future services and equipment, without prejudging general strategic policy decisions which will be taken in the context of the development of the full roadmap with the European Parliament and the Council.

### 5.1. Accelerating analogue switch-off by 2012

All Member States have already decided to phase out analogue broadcasting but, despite the target EU date of 2012, the actual final date for complete switch-off remains uncertain. As the digital dividend will only become fully available after the switch-off of analogue broadcasting in Europe, it is crucial to ensure a timely completion of this process in all Member States.

**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.

### 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

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<sup>26</sup> This has also been identified by the RSPG in its Position Paper on wireless broadband (Document RSPG09-284 adopted on 13 May 2009).

The urgency of this measure is justified by the need to make this band available in a timely manner so as to ensure that it can contribute to the EU efforts for economic recovery. It would also prevent a risk of fragmentation in the internal market due to the fact that an increasing number of Member States are presently considering national regulatory actions regarding this matter.

**The Commission would submit to the Radio Spectrum Committee (RSC) pursuant to the Radio Spectrum Decision<sup>27</sup> 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.

## **6. NEXT STEPS FOLLOWING THIS PUBLIC CONSULTATION**

The Commission invites all interested parties to submit views and comments on the proposals set out in this consultation document. This input will be duly taken into account by the Commission when developing its official proposal for the EU roadmap for the digital dividend in view of the planned policy debate with the European Parliament and the Council.

To this aim, the Commission intends, this autumn, to:

- adopt a Communication on the digital dividend including the Commission proposals for the development of the EU roadmap;
- take action on the two urgent measures identified in section 5, including the proposed technical harmonisation measure and a Recommendation to Member States on interim measures to facilitate the process of making the 800 MHz band available as quickly as possible.

The main elements of the proposals outlined in this document will then be incorporated into the wider spectrum action programme to be submitted at the beginning of 2010 to the European Parliament and the Council for adoption.

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<sup>27</sup> 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 (Radio Spectrum Decision).