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EXECUTIVE SUMMARY OF THE IMPACT ASSESSMENT

Accompanying document to the

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

and the

COMMISSION RECOMMENDATION

Facilitating the release of the digital dividend in the European Union

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EXECUTIVE SUMMARY OF THE IMPACT ASSESSMENT

The 'digital dividend', i.e. the radio spectrum freed up by the switchover of terrestrial TV transmission from analogue to digital format (Digital Terrestrial Television, or DTT), represents a significant amount of high-quality radio frequencies becoming available in all Member States. A coordinated approach to the digital dividend can contribute to two important EU policy goals, namely:

1. **To ensure that there will be sufficient spectrum available in Europe to address the issue of rural access to broadband services** (where a wireless infrastructure is often the only workable solution) and **to reduce the broadband gap** arising from the lack of such services.

2. In addition, **to pave the way for future developments in terrestrial broadcasting** (e.g. high-definition television) by increasing the average efficiency of television transmission infrastructures. This will also enhance the ability of Member States to exercise their competences in the field of audiovisual policy.

1. PROBLEM DEFINITION

In the absence of appropriate coordination between Member States, the potential social and economic benefits of the digital dividend will be significantly lower.

1.1. Inconsistencies between national approaches would reduce the usability of the spectrum due to the effect of interference

It is technically inefficient to use the same spectrum for wireless services that have fundamentally different technical characteristics, such as traditional high power broadcasting and low to medium power wireless broadband. This issue also has cross-border effects, as residual interference in this part of spectrum can travel up to 100 kilometres.

1.2. A lack of EU coordination will prevent Member States allocating the digital dividend to uses with the highest social and economic impact

In the absence of a coordinated approach to minimise the negative impact of interference in the EU, national spectrum authorities may have to give preference to DTT, whereas, if coordination was implemented, they could allow other uses providing higher overall benefits.

1.3. Lack of economies of scale and pan-European coverage of services may hurt the European economy and deter investment

Virtually all of the expected potential uses of the digital dividend rely on the possibility to achieve critical mass and economies of scale. For example, the Commission study found that manufacturers of mobile communications equipment expect a potential market of at least 100 million inhabitants before investing in new production lines for the fourth generation of mobile communications equipment. Economies of scale are also imperative to ensure the successful take-up of newer generations of broadcasting equipment and networks.

1.4. Risk of disruption of important services already making use of part of the UHF band where the digital dividend spectrum is located

Existing wireless microphones and similar applications use particular frequencies in the UHF band (known as 'interleaved spectrum' or 'white spaces'). These services are essential to a number of sectors, particularly broadcasting and event organisation. In the absence of EU coordination, there is a risk that these important uses will, at some point in time, lack frequencies to ensure their continued operation. The number of devices involved (4 to 5 million in the EU[1]) suggests a clear internal market dimension.

1.5. A sizeable part of the benefits could be lost in the absence of proper coordination with third countries

Cross-border interference from non-EU countries can prevent specific services from operating in large EU geographical areas. In turn, this may prevent nationwide deployment since not all regions can be covered. Negotiations between Member States and third countries on the digital dividend frequencies are conducted on a bilateral basis under the ITU mechanisms. However, they have reportedly often been disappointing. A common approach would allow an EU-wide strategy to be established, and strengthen the Community and Member States' position in the negotiations with third countries.

2. ANALYSIS OF SUBSIDIARITY

Most of the issues arising from the use of the digital dividend cannot be dealt with efficiently by the action of individual Member States, given the fact that radio transmissions do not stop at borders. Because of this, the actions of one Member State could significantly affect the interests of others. In addition, the large amount of mobile equipment that can make use of that spectrum presents a clear internal market dimension.

Action at Community level would produce clear benefits compared to action by individual Member States. The main areas of potential added value for the EU are:

- leadership (coordinated EU action is more likely to be emulated by neighbouring countries than action by individual Member States, which in turn can lead to the wider availability of the spectrum in the EU itself);
- more efficient use of spectrum and economies of scale (if a common band plan emerges);
- the general benefits of fostering the internal market (including through interoperability and roaming if mass market uses, such as wireless broadband, emerge).

3. OBJECTIVES

The first objective is to maximise benefits from the digital dividend and to act sufficiently rapidly to avoid fragmented national legacy situations, which would hamper the establishment of a single market for future services and equipment.

[1] Source: APWPT.

Secondly, this initiative seeks to ensure sufficient consistency between national approaches and foster convergence over time, with a view to supporting innovation and long-term benefits for consumers, strengthening the single market, and increasing EU competitiveness.

Thirdly, the Commission's action should aim to facilitate the early efforts by several Member States to open up the 790-862 MHz sub-band to new services such as wireless broadband and to help avoid fragmentation in the internal market (i.e. different Member States imposing different technical or functional restrictions).

4. POLICY OPTIONS

The Communication, complemented on specific aspects by the Recommendation, puts forward proposals in four main areas:

– Timely switch-off of analogue terrestrial TV as a prerequisite to exploit the digital dividend;

– Coordination of Member State action to ensure a coherent approach to the 790-862 MHz sub-band;

– Common initiatives to ensure the optimal use of spectrum in all parts of the UHF band (470-862 MHz);

– Technical harmonisation of the 790-862 MHz sub-band (under the Radio Spectrum Decision mechanism).

5. ASSESSMENT OF IMPACTS

5.1. Impact of options regarding the timely switch-off of analogue terrestrial TV

5.1.1. No further EU action

Ten or eleven Member States are likely to continue some analogue broadcasting throughout 2012, and some even until 2013, creating the risk of further delays.

5.1.2. Recommendation that Member States take all necessary steps to switch off analogue signals by 1 January 2012

The Commission study estimated that avoiding a one-year delay in the availability of the 790-862 MHz sub-band across the EU due to a few Member States could generate a total benefit of several billion euros in net present value (min. EUR 1 billion in consumer and supplier surplus only, accumulated over 15 years[2]).

Since all Member States are already committed to digital TV, the cost is limited to advancing the procedure by typically a few months in 10 or 11 Member States.

[2] Ofcom UK estimated the benefit for the UK alone, under similar conditions, at GBP 100 to 400 million.

There are **social costs**, in particular due to bringing forward the purchase of digital-to-analogue converters by consumers who continue to use an existing analogue TV[3]. The analogue switch-off experience in the five Member States that have already gone to digital (and in the US) indicates, however, that this social impact is limited and can be mitigated by specific subsidies targeting disadvantaged groups.

5.1.3. Mandating analogue switch-off by 1 January 2012 (a Community legal measure)

The benefits and costs, including the social impact, would be of the same nature as for the previous option (recommended switch-off), but with the highest probability to realise the greatest overall benefit.

5.2. Common initiatives to ensure the optimal use of spectrum in the whole UHF band (470-862 MHz)

This concerns possible coordination actions to facilitate the freeing up of additional spectrum capacity, mainly concerning spectrum below 790MHz, thereby enhancing the digital dividend. The detailed quantitative impacts have not been assessed, as these measures are **at present only preliminary proposals for discussion at EU level**.

5.2.1. No further EU action on coordination activities

The main benefit of this option is the absence of compulsory additional costs for upgrading receivers or transmission networks.

5.2.2. Impact of further coordination activities in sub-bands below 790 MHz

These are some of the identified areas where further coordination activities could be envisaged:

– Ensuring minimum transmission compression and quality standards for broadcasting networks, including for new DTT receivers.

– Wider use of Single Frequency Networks (SFNs).

– Promoting frequency-agile systems, possibly using Community funding.

– Assisting existing users of wireless microphones to migrate to new frequencies, as well as considering the use of 'white spaces' for cognitive technologies[4].

– Improving cross-border coordination of spectrum both between Member States and with non-EU countries.

Each type of initiative has a potentially positive effect, but it is difficult to perform a reliable sensitivity analysis at this stage. One negative social impact could be that not all television viewers would have access to the new equipment, but this could be offset by a period during which the signals would be broadcast in both the old and new standards to allow reception by first-generation DTT equipment.

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[3] The cost of most digital-to-analogue converter boxes does not exceed 50 euros.

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

5.2.3. Impact of mandatory requirements to improve spectrum efficiency linked to the digital dividend

The further impact of mandatory requirements is generally incremental for each of the specific measures.

5.3. Impact of options regarding the coordination of Member State actions in the 790-862 MHz sub-band

5.3.1. No further EU action

A number of Member States[5] are, or will be shortly, in a position to decide to open this band to electronic communications services. This option could result in regulatory measures at national level which could be in contradiction with those in other countries, jeopardising the technical harmonisation of this sub-band to enable new broadband uses.

5.3.2. Recommendation that Member States take no action that would interfere with the technical harmonisation measure being planned at EU level in the 790-862 MHz band

In practice, this should only concern (temporarily) those Member States envisaging new uses in this sub-band. Therefore, virtually no costs would arise while efforts focus on facilitating the emergence of a rapid and stable consensus on harmonised technical conditions.

5.4. Impact of options regarding the technical harmonisation of the 790–862 MHz sub-band

One of the main conclusions of the Commission study is that the 'private value'[6] that could be created if all Member States were to adopt the 790-862 MHz sub-band for electronic communications services under consistent conditions of use would be between at least EUR 17 billion and up to EUR 44 billion in the most optimistic case, depending on the assumed level of demand for different services[7].

A significant social benefit would be generated by greater access to broadband services, and the possibility to ensure the pan-European interoperability of services.

There should be no overall negative distributional impact on broadcasting services since any loss of broadcasting capacity in the 790-862 MHz band would be offset by network re-planning and/or improved transmission technology. The associated costs will depend on the number of DTT transmitters located in the sub-band for each Member State (distributive impact). However, the Community action should facilitate rather than complicate the re-planning of broadcasting networks.

5.4.1. Guidelines (non mandatory) for harmonisation of the 790–862 MHz sub-band

The related costs are likely to be very modest, but would not significantly increase the likelihood of achieving the major benefits of harmonisation.

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

6 Consumer and producer surplus.

7 Net present value over 15 years, compared to no EU coordination.

5.4.2. Commission Decision setting the technical parameters for the 790-862 MHz band

This policy option is likely to yield the vast bulk of the expected benefits, as evaluated by the Commission study, mentioned in the introduction to section 5.4 above, because the increased level of harmonisation will produce economies of scale and facilitate interoperability. In turn, this will facilitate the achievement of important EU social objectives such as ensuring 'broadband access for all'.

5.4.3. Commission Decision setting the technical parameters and setting a mandatory end-date for clearing the 790-862 MHz sub-band of broadcasting (high-power) services

This option would ensure maximum benefits as it would remove any uncertainty for stakeholders. However, such a decision should be subject to the agreement of the **European Parliament and the Council** due to the potential impact, in particular on the development of broadcasting services.

6. COMPARISON OF OPTIONS

6.1. Comparison of options regarding the timely completion of analogue switch-off

A mandatory Community measure would tend to be opposed by several Member States, citing major issues of public interest.

Therefore, the option to issue a 'Recommendation' (option in 5.1.2) seems the most appropriate. It should help reinforce previous political commitments, which in turn would have a positive 'psychological' effect on stakeholders. If this option helps accelerate adoption of the 790–862 MHz sub-band by a few months across the EU, it could yield significant benefits as explained, and reduce the cost for broadcasters to 'simulcast' (transmit the same programmes in both analogue and digital format).

6.2. Comparison of options regarding optimal use of spectrum in the UHF band (470-862 MHz)

The option 'further coordination activities' opens the way for a further digital dividend in the long term without creating major costs. It appears to be a justified and proportionate option as, at present, none of the measures considered can show a clear advantage for a compulsory approach at EU level.

6.3. Comparison of options regarding the coordination of Member State action in the 790-862 MHz sub-band

The Member States presently considering national regulatory action concerning this sub-band are under increasing pressure to take action, so failure to provide a Community template for a 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 proposed recommendation (in 5.3.2.) therefore seems the preferable option.

6.4. Comparison of options regarding technical harmonisation of the 790-862 MHz sub-band

While the absence of an end-date for clearing the 790-862 MHz sub-band in this option (5.4.2.) could lead to uncertainty in the EU single market due to different rates of implementation and take-up in different Member States, it is important to take into account the sensitivities of Member States, mainly due to different switch-off speeds and different legacy situations regarding broadcasting.

In consequence, the best option at this point in time, which also satisfies proportionality requirements, appears to be requiring all Member States to apply the same technical conditions when changing the designation of the 790-862 MHz sub-band from the current designation for broadcasting, and recommending that awards be made on a technology- and service-neutral basis with common technological conditions and a common band plan.

If the Commission were to set an end-date, it is not certain whether all Member States would support such a measure. The option selected means that, while allowing flexibility for Member States in the choice and timing of any move to wireless broadband use, the technical conditions that will apply once this choice is made are clear and coordinated, thus removing the principal risk of fragmentation.

7. MONITORING AND EVALUATION

It is proposed to base evaluation and monitoring on operational objectives in the specific areas of concern, in particular:

- The timeliness of measures taken by Member States to ensure the complete switch-off of analogue TV by 1 January 2012;
- Progress in making the 790-862 MHz sub-band available for electronic communications under harmonised technical conditions;
- Progress in migrating to ‘best in class’ technologies for transmission networks.

The Commission should be assisted by relevant advisory committees.