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**COMMUNICATION FROM THE COMMISSION
TO THE EUROPEAN PARLIAMENT AND THE COUNCIL**

**FIRST ANNUAL REPORT ON RADIO SPECTRUM POLICY IN THE EUROPEAN
UNION; STATE OF IMPLEMENTATION AND OUTLOOK**

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(Text with EEA relevance)

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SUMMARY

This Communication constitutes the first report on activities undertaken under the Radio Spectrum Decision (RSD)¹; it describes past and future actions and challenges related to the implementation of a successful Community policy in this area.

The RSD has established a policy and legal framework in the Community to coordinate policy approaches and, where appropriate, harmonise conditions for the availability and efficient use of the radio spectrum necessary for the establishment and functioning of the internal market in Community policy areas.

This first phase of implementation of the RSD has been successful: the necessary mechanisms have been set up and the four main types of action called for under the RSD initiated. Policy actions have been launched with the support of the Radio Spectrum Policy Group; mandates have been issued to CEPT by the Commission to elaborate technical implementing measures, with the assistance of the Radio Spectrum Committee; the availability of information regarding spectrum use is being analysed; finally, appropriate coordination by the Commission has allowed for the promotion of Community policy objectives in international spectrum negotiations.

The long-term ability of this policy to meet its objectives and to deliver benefits to European citizens depends on effective cooperation between all actors concerned, i.e. the Commission, Member States at the policy and technical levels and the European Parliament. These instances have agreed on a policy framework to support the timely introduction of innovative wireless applications, while balancing the current and future needs of different sectors, including public services.

Effective spectrum regulation is a fundamental requirement for an information-based modern society, enabling citizens to benefit from a wide choice of new applications and industry to increase its productivity via technological innovation. A continuous analysis and reform of spectrum management is required to make best use of this resource. Given Europe's leadership and interest in wireless applications, this is a task which needs to be taken up in full awareness of the issues at stake. The Community can give a valuable contribution to the coherence and final success of this important task.

This document informs the Council and European Parliament about the activities undertaken to date pursuant to the Radio Spectrum Decision and seeks their support for the policy perspectives for future action.

¹ Decision 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, OJ L 108, 24.4.2002, p.1

1. INTRODUCTION

This first report on activities undertaken under the Radio Spectrum Decision (RSD) is presented pursuant to Article 9 of the Radio Spectrum Decision (RSD) and covers the period from the publication in the Official Journal of the RSD on 24 April 2002 to 15 June 2004.

All radio-based devices use the radio spectrum to transmit or receive information. The use and therefore the value of the radio spectrum has dramatically increased in recent years, as wireless applications have been very successful in addressing many of society's changing needs, such as for mobility and for data transmission. But spectrum availability is also **critical** for many other applications, e.g. for accurate weather forecasting, radio astronomy, air and maritime safety, broadcasting and for devices simplifying everyday life such as remote controls and hearing aids.

Because of possible interference between different radio services operating in the same or adjacent frequencies, access to the radio spectrum has historically been closely regulated. Spectrum management has long been seen as a "technical" domain dealing with the avoidance of harmful interference and the technical optimisation of spectrum use. More recently, it has been identified as a means of generating public revenues in proportion to a perceived "spectrum scarcity" value. However, **a long-term, policy-based approach** to the management of this resource aiming at fostering innovation and the introduction of increasingly added-value applications could capture much **greater overall benefits for society**.

The availability and affordability of radio-based services across the European Union may be assisted by **harmonisation** of the conditions of use for such services, including frequencies, thereby reaping single market benefits. Whilst a coordinated EC approach in this area is generally considered to have been an important element in the success of the GSM standard in Europe, Member States have preferred voluntary spectrum harmonisation activities in the last decade.

The RSD has been adopted to strengthen the Community's involvement in this area, by developing further the policy aspects related to spectrum management, and providing legal certainty to the harmonisation of radio spectrum needed to support Community policies. Using the technical expertise of the European Conference of Postal and Telecommunications Administrations (CEPT), the intergovernmental organisation regrouping 46 European countries, the Commission is now undertaking a number of harmonisation activities. It is also examining with the Member States new policy approaches to improve the flexibility and responsiveness of spectrum management, and to remove regulatory hurdles to technological innovation.

2. POLICY MAKING AND IMPLEMENTATION

The Commission has launched actions on the **four main elements** specified in Article 1.2 RSD, relating to **policy-making, implementation measures**, provision of **information** on spectrum use and **international negotiations**. To do so, the necessary institutional mechanisms were created first:

2.1. Setting up a Spectrum Policy Mechanism

Two different platforms have been established:

- **Radio Spectrum Committee (RSC)**

This Committee, chaired by the Commission and composed of representatives of the Member States, is subject to comitology procedures². It assists the Commission in the implementation of the specific provisions of the RSD.

- **Radio Spectrum Policy Group (RSPG)**

The RSPG³ is a *sui generis* advisory body to assist and advise the Commission on issues of a broader policy scope than the technical measures typically covered by RSC. Its membership includes the Commission and high-level representatives from the Member States, which also provide its chairman. Interested parties are involved through public consultations organised by the RSPG.

2.2. Launching Actions on Specific Spectrum Issues

The creation of two distinct groups to address radio spectrum issues in the Community reflects different competences and approaches in this area, i.e. the development of Community regulation (“technical implementing measures”) and the approximation of Member States’ positions on policy issues.

2.2.1. Technical implementing measures

Pursuant to Article 4.3 RSD, the Commission may adopt legally-binding decisions via technical implementing measures (TIMs) to meet the aims of the RSD, following preparatory work by CEPT and the opinion of the RSC. Together with the development of harmonised standards where applicable, TIMs aim to harmonise the internal market for radio equipment.

While spectrum harmonisation has in the past been mainly carried out for high-power telecom services, regulation is increasingly addressing numerous low-power technologies which are emerging, notably via the strong adoption of the wireless paradigm by the IT industry. Such harmonisation can **support innovation** by increasing economies of scale and the legal certainty required for investment decisions, and resolve interference and enforcement problems related to the easy diffusion of such devices across national borders.

Mandates have been issued to CEPT under Article 4.2. RSD, to develop harmonised technical solutions for specific issues in line with Community objectives and policies on the following issues (in order of mandate adoption):

- **Third generation mobile communications (IMT-2000):** development of harmonised usage parameters for additional spectrum for third-generation mobile communications foreseen for 2008, in order to facilitate timely development of equipment and rapid takeup;

² Council Decision 1999/468/EC

³ Commission Decision 2002/622/EC

- **Re-use of the ERMES band:** the spectrum around 169 MHz currently under-employed by the European radio messaging system (ERMES), is being reviewed for new uses which could be assisted by EU-wide harmonisation;
- **Radio Local Area Networks (RLAN):** harmonisation of spectrum for next-generation RLANS providing wireless broadband access for computers and portable devices in the 5 GHz range;
- **Automotive short-range radars (SRR):** increasing road safety, the objective of the *eSafety* initiative, would benefit from spectrum harmonisation for SRR applications, with a long-term harmonised band at 79 GHz and a temporary opening of the 24 GHz band.
- **Ultra-Wide Band technology (UWB):** a harmonised regulation of communications and imaging applications transmitting data over a large spectrum range has the potential to affect a substantial number of Community policies;
- **Short-Range Devices (SRD):** many types of low-power wireless equipment are typically low-cost and operated without a licence. A generic approach to prioritise and harmonise different frequency bands would remove barriers to an efficient EU internal market.
- **Terrestrial Flight Telephone System (TFTS):** a more efficient use of the spectrum bands designated earlier for the harmonised introduction of TFTS is under review.

Regulation harmonised in the EC via such mandates will seek to stimulate the introduction of new applications whilst providing adequate protection for existing users, including non-commercial or scientific services, and sufficient flexibility for future users.

2.2.2. Policy Development Activities

Besides harmonisation, coordination of broader spectrum policy issues affecting Community policies is also needed, including concerning assignment and spectrum licensing conditions not covered by the definition of radio spectrum management at a technical level. During its first year of operation, the RSPG has agreed a work programme defining the scope of issues it will address, and is developing specific views (“Opinions”) on:

- **Secondary trading of rights to use radio spectrum,** considering how the national introduction of market mechanisms in spectrum management can be optimised to take into account the potential impacts of this new approach for the Community;
- **Spectrum implications of broadcasting digital switch-over,** assessing how to foster the timely development of digital broadcasting in the EU while supporting the efficient use of the radio spectrum for future new technologies and societal needs;
- **Preparations for the ITU WRC-07 Conference.** An appropriate EC policy input and coordination in international spectrum negotiations is essential for the promotion of EC policies and interests.

2.3. Availability of Information

Under Article 5 RSD, action may be taken to ensure the co-ordinated and timely provision of information concerning the allocation, availability and use of radio spectrum in the EC. The

Commission has launched a study to review the information already available and whether it is sufficient for appropriate decision-making, notably in the light of new spectrum access mechanisms such as spectrum trading.

2.4. International activities

With due regard to Article 6 RSD, the Commission has:

- monitored international developments regarding radio spectrum. Member States have not formally informed the Commission of any specific difficulties created by third countries or international organisations for the implementation of the RSD;
- held a dialogue with the EC's main trading partners on developing innovative spectrum management approaches and reform initiatives;
- promoted EC interests in international spectrum negotiations. **Common policy objectives** defined⁴ for the ITU Conference WRC-03, **were met** for the EU satellite radio-navigation system, GALILEO, IMT-2000 and other broadband wireless access platforms⁵.

2.5. Assessment of Achievements of the Community Spectrum Policy to date

Implementation of the RSD has been successful so far: in general, activities progresses satisfactorily both in the RSC, in RSPG and in the CEPT technical groups. However, the successful achievement of the RSD's aims will depend on the active cooperation by all relevant actors and concurrence of various elements, i.e.:

- **CEPT should continue to support the implementation of the RSD**, notably by delivering in a timely manner results in line with Community policy objectives, so that they can be transposed into Commission decisions.
- **The mechanisms** to prepare and adopt Commission decisions under the RSD, should be sufficiently **flexible and responsive** to rapidly-evolving societal needs and wireless technologies.
- The **political will** to improve co-ordination of radio spectrum policies between Member States, via the RSPG, should be **sufficiently strong** to deliver actionable recommendations on such issues.
- **Proper synergy and timing coordination** between RSPG policy initiatives, RSC implementing measures and other Community activities must be ensured.

3. FUTURE ACTIONS ENVISAGED

According to Art. 9 RSD, this report also aims to provide an overview of future activities. The Commission has now launched a significant number of actions regarding harmonisation of usage conditions for new technologies, but also concerning more general policy issues. **The effective implementation of all these actions will be the priority for this coming year.**

⁴ COM(2003) 183 final, endorsed by Council resolution of 2 June 2003, Doc.9131/03 and COR 1.

⁵ COM(2003) 707 final.

3.1. Technical Implementing Measures

During the next reporting period, and in cooperation with the Member States, the Commission intends to adopt **the first implementing decisions**, in line with the methodology defined in Article 4 of the Radio Spectrum Decision. Adopted measures are expected to include the harmonisation of the use of spectrum for automotive radars, for RLANs and for third-generation mobile communications.

Concerning **legislative legacy**, the Commission intends to request the European Parliament and the Council to withdraw the ERMES Directive⁶, and to provide for new harmonised uses for this frequency band via a technical implementing measure under Article 4.3. RSD. The Commission will also continue monitoring the future relevance of the other existing Council directives on GSM⁷ and DECT⁸.

The Commission will continue to keep under consideration the possibility of additional TIMs where harmonisation would be beneficial to Community policies. Harmonisation of spectrum will be pursued via the RSD where possible benefits (increases in economies of scale, roaming, competition and pan-European services, with less cross-border interference) are greater than possible negative effects (notably less flexibility to fit local market conditions). Further issues related to new communication technologies and to emergency services are currently being analysed with the assistance of the RSC.

3.2. Spectrum Policy Issues

In line with the objective of fostering the coordinated introduction of innovative means to manage the radio spectrum across Member States, the Commission will assess the need for Community action on **trading of spectrum rights** – an important element of spectrum management reform –, with the support of the RSPG and of an independent study conducted for the Commission.

The analysis of the implications of **digital broadcasting switch-over** for radio spectrum policy and on how to use optimally the spectrum made available by this technological transition will be finalised, and the possibility of Community-wide measures in support of common policy objectives considered.

Coordination of EU positions in **international negotiations**, notably WRC-07 and the ITU Regional Radio Conference (ITU-RRC) to establish a spectrum plan for digital broadcasting will continue, so as to ensure that the negotiation of technical-regulatory agreements at global level takes full account of Community policy objectives and principles.

A **new request for Opinion** will be issued by the Commission to the RSPG on **wireless platforms**. This will promote a forward-looking strategic vision for the spectrum needs of current and new technologies, such as GSM, 3G, RLAN, etc., with the objective of improving the coherence of decisions on individual services in the European Union.

In view of spectrum reforms in other countries, it is important that Europe is not left behind. Besides specific issues, the RSPG will continue assessing the possible benefits and difficulties

⁶ Council Directive 90/544/EEC

⁷ Council Directive 87/372/EEC

⁸ Council Directive 91/287/EEC

associated to **different spectrum management models**, namely traditional centralised administrative decisions, market-oriented solutions and free or **‘unlicensed’ use of spectrum**. Each one of such approaches may be most appropriate for specific instances and may require Community harmonisation or coordination for an effective implementation.

4. STRENGTHENING THE COHERENCE OF SPECTRUM POLICY IN THE EC

Radio Spectrum policy must be considered in the general EC policy context. While the impact of spectrum regulation on specific Community policies, such as the Information Society, maritime safety, the Single European Sky and Space policy, is clear, correlations also exist with broader generic policies and principles. A **Spectrum Interservice Group (SIG)** has been created within the Commission for this purpose, and to prepare RSC and RSPG meetings as well as international negotiations.

Harmonisation of radio spectrum use must be consistent with the existing **electronic communications regulatory framework**⁹, which refers to radio spectrum as an essential input for radio-based electronic communications services. The essential requirement to **avoid harmful interference** may justify an exception to the general rule that spectrum use should not be subject to individual rights but to conditions included in general authorisations to provide services or networks. In this context, a common definition and applicability of the concept of “harmful interference” and its implication on acquired spectrum rights in the Community should be examined.

Ensuring **efficient use of radio spectrum** may justify the limitation in the number of individual rights granted to use the spectrum. While no common understanding of the term “efficient” exists, spectrum should be made available in the most flexible way possible so that spectrum scarcity is not created by regulation, without overlooking the future spectrum needs of services of public interest. Spectrum users must be encouraged to be more efficient, by moving from obsolete to more modern and “intelligent” technologies, and by using spectrum trading.

Regulatory decisions on radio spectrum allocation and assignment also affect the **degree of competition in specific markets** by limiting the number of competitors. While this is the case for assignment and licensing measures, it also applies to allocation of spectrum to a specific radio service, aspects of which therefore may fall under Community law. Allocation of insufficient spectrum may limit the assignment of spectrum to one sole user for a specific type of service, thereby creating an exclusive right of use. A common understanding will be required about how radio spectrum management measures can be brought in line with Community legal provisions in the field of competition.

Technological neutrality in spectrum allocation needs to reflect obligations under both international WTO rules and Community legislation. Unless duly justified, allocation on an exclusive basis to specific standardised technologies must be avoided. Systems with comparable functionalities and able to satisfy essential requirements in different, perhaps proprietary ways, should be treated in a non-discriminatory manner. Reference to product requirements in terms of performance is preferable to design or descriptive characteristics.

⁹ In particular Council/EP Directives 2002/20/EC and 2002/21/EC

The creation of an **Internal Market for wireless equipment** requires a close interaction between different Community regulatory tools. The **R&TTE Directive**¹⁰ harmonises regulatory requirements for putting radio equipment on the market and into operation across the EC, with adequate safeguards to protect against harmful interference. The RSD could be used to overcome, where justified, the “fragmentation” of spectrum allocation in the EU identified as an obstacle to the successful achievement of single market objectives. Co-ordination of action with the TCAM, the standing Committee for the R&TTE Directive, will also be continued.

Coexistence must also be ensured between radio equipment and other non-radio sources of electromagnetic radiation such as power line communications. Therefore, a closer link must also be made with the **Electromagnetic Compatibility Directive**¹¹, which also has the avoidance of harmful interference as an essential requirement.

The development of lighter regulatory means enabling fast-moving sectors to introduce new technological applications in the market-place will be supported by stronger cooperation mechanisms with relevant **EC RTD Framework Programme** activities.

A reflection on how to encourage innovation in the Community via more flexible regulation on **experimental rights** to use the radio spectrum is needed. Large-scale real-life testing of new technologies enables their rapid introduction in the market-place, with provisions to protect existing spectrum users from unforeseen harmful effects. Without an appropriate framework for Community-wide experimental rights, new wireless technologies are increasingly being tested and introduced outside Europe first. Furthermore, the coexistence in the radio spectrum of very different technologies leads to difficulties in the development of regulation exclusively on the basis of theoretical interference models. Therefore, practical measurement campaigns ought to be used to validate such models.

New developments in wireless technology are not socially neutral and may create new **policy or ethical issues beyond the scope of the RSD. Protecting public health** against any noxious effect of electromagnetic emissions of radio equipment must be a priority: the conditions of use of the radio spectrum by radio devices must, as a principle, be selected to minimise any potential risk to the public. The proliferation of wireless means to exchange data, often without users knowing, such as RFID “smart tags”, raises **privacy issues**. Although not technically covered by implementing measures of the RSD, issues such as these cannot be ignored in the general Community approach.

5. CONCLUSION

Radio-based technologies are an essential support for major European policies and for fast-growing industrial sectors. Innovative technologies can make new services and applications possible and increase the efficiency of spectrum use. Regulations must allow market actors to explore the best uses of these technologies, while protecting the requirements of existing services against harmful interference. Europe must respond to the progress in this direction achieved by its main trading partners.

¹⁰ Council/EP Directive 1999/5/EC

¹¹ Council Directive 89/336/EEC

Implementation of the RSD has been successful so far, with the setting up of the institutional structure, the adoption of a mechanism for policy formulation and the development of technical implementing measures in a large number of areas to provide legal certainty on spectrum harmonisation. The Commission counts on the essential contribution of other actors such as CEPT, standardisation bodies like ETSI, and the Member States to make this process work.

Radio spectrum policy in the Community will continue to **encourage the harmonisation of spectrum where necessary** to facilitate innovation and support Community policies, while seeking not to constrain users unduly. The principles of proportionality, non-discrimination, fair competition, subsidiarity and transparency enshrined in relevant Community legislation will be applied in the spectrum domain.

The Commission is inviting the European Parliament and Council to acknowledge the implementation of the RSD to date and to support the policy perspectives outlined in this report.

Furthermore, Member States are invited to:

- continue providing full support to activities in the RSPG and RSC;
- promote Community objectives relating to EC policies in international negotiations;
- encourage CEPT to support the implementation of the RSD by delivering satisfactory mandate results;
- ensure effective and timely implementation of Commission decisions;
- fully cooperate to provide transparency on spectrum use.

The Community is confronted by some important policy challenges to achieve an effective use of spectrum for the benefit of European citizens, for assisting companies to increase productivity via technological innovation and for supporting the competitiveness of the EU radio manufacturing and services sectors. With the implementation of the RSD, and in partnership with other actors in this domain, the Commission will seek to continue addressing such challenges successfully in the future.