

Unleashing Europe's Wireless Potential

Wireless communications is one of Europe's most dynamic technology sectors and underpins European society in areas as diverse as transport, security and environmental protection. The entire industry relies on radio spectrum – a 'raw material' in short supply.

Every time you turn on your radio, use your mobile or cordless telephone, lock your car by remote control or use a satellite navigation system, you are using radio spectrum.

All wireless equipment receive information transmitted in a different part of the radio spectrum – your favourite radio station is probably on the 'FM band' (around 100 MHz), for example, while your GSM phone operates at either 900 or 1800 MHz.

If they did use the same frequency they would usually interfere with each other, so regulating the use of radio spectrum is essential. And in a European single market, this coordination must sometimes happen on a European scale.

Unfortunately, this has not always been the case. With the **Radio Spectrum Decision** (RSD, 676/2002/EC, March 2002), the EU - with the expert assistance of the European Conference of Postal and Telecommunications Administrations (CEPT) – aims to make the use of radio spectrum more flexible and ensure the development of a European single market, stimulating growth in this vital sector.

New Potential, New Challenges

The potential is illustrated by Europe's GSM standard. EU regulation of the radio spectrum was essential in launching GSM, ensuring that the standard worked across the EU and placing European industry at the forefront of a global sector.

And yet GSM is just one wireless application. Many of today's cutting-edge wireless technologies promise new possibilities in areas as diverse as transport, health, the environment and security. Efficiency improvements are possible across the public sector and in all areas of industry.

The management of radio spectrum in Europe, however, has not always kept pace with this potential. Until the RSD, radio spectrum management could not effectively, systematically and consistently take into account the needs of Community policies, including the achievement of the Internal Market (the GSM Directive was a piece of *ad hoc* EU legislation).

This leads to a paradox – while many of today's most dynamic and useful technologies are radio-based, their use is still tightly constrained by national rules and inflexible procedures.

As a result, some organizations under-use the radio spectrum they have rights to, while new sectors are constrained by 'spectrum scarcity'. Organisations with 'legacy spectrum' also have a clear market advantage over new entrants, further limiting innovation and efficient spectrum use.

Despite voluntary coordination between Member States, moreover, national rules now effectively fragment the EU single market. Radio spectrum regulation must therefore be brought up to date in a coordinated way across Europe if further fragmentation is to be avoided and new success stories such as GSM are to be realised.

Hence the Radio Spectrum Decision aims to ensure sufficient harmonisation to support the single market and promote innovation and competitiveness, while making the use of spectrum more flexible.

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What is Spectrum Trading?

Spectrum trading means buying or selling the right to use a frequency band. This is mainly regulated at national level. Trading can help to determine the "market value" of spectrum, so the introduction of this approach would help reconcile demand and supply, in general within regulatory restrictions on its use.

Spectrum trading is permitted by the EU's Electronic Communications Directive (2002/21/EC), but it is up to Member States to decide on the conditions for introducing it. An independent study has recently been conducted to determine the conditions and options in introducing spectrum trading in the EU.

As a general rule, Member States must base allocation and assignment of radio frequencies (choice of technology and who uses it), on objective, transparent, non-discriminatory and proportionate criteria, so as not to distort competition (2002/21/EC Article 9).

How Does It Work?

The RSD empowers the European Commission to mandate the European Conference of Postal and Telecommunications Administrations (CEPT) to develop technical solutions for harmonizing spectrum use to give effect to EU policies. These solutions can be made legally binding by Commission decisions via **Technical Implementation Measures**.

With the RSD, the following entities have been established :

- **the Radio Spectrum Committee (RSC):** chaired by the Commission and composed of representatives of the Member States, the RSC assists the Commission in developing decisions regarding Technical Implementation Measures;
- **the Radio Spectrum Policy Group (RSPG):** composed of high-level representatives from the Member States and the Director General of DG Information Society, the RSPG advises the Commission on issues of a broader policy scope than the technical measures covered by the RSC.

Under the RSD, the Commission can also act to ensure the co-ordinated and timely provision of information concerning the allocation, availability and use of radio spectrum in the EC.

Finally, appropriate coordination by the Commission has allowed for the promotion of Community policy objectives in **international spectrum negotiations**.

2004 Progress Report

The first annual progress report (COM(2004)507) summarised the progress made since the Radio Spectrum Decision was taken in 2002. Activities have been focused on establishing a common EU policy base and on seven specific measures.

Policy issues currently addressed by the RSPG include:

- EU coordination to prepare for the introduction of spectrum trading (see box, page 1);
- implications for spectrum use of the switchover from analogue to digital broadcasting;
- use of spectrum for current and future wireless platforms, such as GSM, third-generation mobile communications, etc;
- EU policy links with international spectrum fora, such as the International Telecommunication Union (ITU) World Radio Conference, where global rules for sharing spectrum are set.

Technical harmonisation work is now under way on seven Commission mandates to CEPT:

- additional spectrum for third-generation mobile communications (by 2008);
- spectrum harmonisation for next-generation Radio Local Area Networks (RLANs) providing wireless broadband access for computers and portable devices;
- new uses, e.g. for hearing aids (eInclusion), of spectrum that is currently under-used by the European Radio Messaging System (ERMES);
- spectrum harmonisation for automotive short-range radars to increase road safety;
- harmonised regulation of high speed short-range communications and imaging applications that use Ultra-Wide Band (UWB) technology;
- harmonising and prioritising frequency bands for Short-Range Devices (low-power, low-cost equipment, typically operated without licence);
- more efficient use of spectrum bands that are under-used for the Terrestrial Flight Telephone System (TFTS).

The first example of this process was seen on 8 July 2004, with a decision adopted to harmonise the 79 GHz band for automotive short-range radars.

The Commission has also launched a review of the available information on spectrum usage to see whether it is sufficient for appropriate decision-making, notably in the light of new mechanisms such as spectrum trading.

See Also:

- FactSheets 13 & 14: eCommunications Regulation
- Factsheet 23: Mobile Communications

All Factsheets and more can be downloaded from "Europe's Information Society: Thematic Portal", below.

Further Information

- **Radio Spectrum Policy:**
http://europa.eu.int/information_society/topics/radio_spectrum/index_en.htm
- **Europe's Information Society: Thematic Portal**
http://europa.eu.int/information_society/
- **Information Society Directorate-General:**
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