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 receives 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 could interfere with each other, so regulating the use of radio spectrum is essential. And in a European single market, rules on spectrum use need to be coordinated across frontiers.

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 for equipment and services, stimulating growth in this vital sector.

Radio spectrum policy: achievements and next steps

In its second annual progress report on the RSD, (COM(2005)411) the Commission outlined a forward looking strategy for Radio spectrum policy in Europe. It proposes a mix of models, combining the use of spectrum markets, unlicensed spectrum and traditional management.

Specific policy issues that have reached the first concrete results include:

- a proposal for a market-based approach to spectrum management in Europe (see box). Legislative proposals for the coordinated introduction of spectrum markets in Europe will be included in the review of the Regulatory Framework for Electronic Communication Services that is scheduled to begin in 2006 and
- The implications for spectrum use of the switchover from analogue to digital broadcasting.

Technical harmonisation has also delivered its first results in:

- spectrum harmonisation for next-generation Radio Local Area Networks (RLANs) providing wireless broadband access for computers and portable devices, and
- spectrum harmonisation for automotive short-range radars, to increase road safety.

Work is still at the **development stage** on:

- 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,
- the role of unlicensed spectrum in flexible spectrum use,
- new uses, e.g. for hearing aids, of spectrum that is currently under-used by the European Radio Messaging System (ERMES),
- 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

What is the "market-based approach"?

The Commission has proposed that specific bands - spectrum used for "electronic communications services"- should be subject to tradability throughout the EU. Spectrum trading means buying or selling the right to use a frequency band. The introduction of trading has been a recent trend in spectrum management and 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 order to also drive innovation and the development of new wireless technologies, trading would be supported by limited regulatory restrictions on its use, permitting any technology that would not cause interference and allowing the provision of any communications service.

equipment, typically operated without licence,

- more efficient use of spectrum bands that are under-used for the Terrestrial Flight Telecommunications System (TFTS), and
- additional spectrum for third-generation mobile communications (by 2008).

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

New potential, New Challenges

Many of today's cutting-edge wireless technologies play an essential role in Europe's continuous modernisation – from health to social inclusion, from regional development to the protection of our environment and promotion of cultural diversity.

The potential and the challenge are 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. A similar European standard was developed for paging (ERMES), a system that never took off as GSM displaced it.

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

This led 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 among 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 more success stories such as GSM are to be achieved.

- 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.

What does radio spectrum policy at the European level mean?

The Radio Spectrum Decision also covers spectrum use outside communications and 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**.

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Further the RSD, the following entities have been established:

- **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;
- **Radio Spectrum Policy Group (RSPG)** - composed of high-level representatives from EU 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 EU.

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

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".

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:** Av. de Beaulieu 24, 1160 Brussels infso-desk@cec.eu.int