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Radio spectrum is the basis for wireless communications like Wi-Fi or mobile phones, but is also key to areas like transport, broadcasting, public safety, research, environmental protection, and energy. But radio spectrum is a finite resource, and the devices that use it can easily cross borders: so using it best needs effective and efficient coordination at European level.

The importance of Radio Spectrum for wireless technologies

Wireless technologies are becoming ever more widespread – and your mobile phone is merely the best known example. The tremendous popularity of smartphones and tablet computers is a case in point. They all depend on wireless connectivity and benefit from wireless broadband, the [digital dividend](#) [1] and the [Ultra-High Frequency \(UHF\) proposal](#) [2]. Another example is [Wi-Fi technology](#) [3], used by millions for easier internet connections at home and in the office.

The total volume of services depending on radio spectrum availability is estimated to be worth at least €200 billion annually in Europe.

And indeed, more and more sectors are using various wireless technologies, e.g. for logistics applications using RFID to connect [sensor networks](#) [4],[5] or automate processes in factories or at home. In addition, vehicles increasingly use wireless technologies (e.g. radars and in the future vehicle-to-vehicle and vehicle-to-infrastructure communication) to increase [road safety](#) [6], and eventually drive autonomously, and the radio spectrum is also vital in areas from scientific services to satellite communications.

The next steps in the European Union's Radio Spectrum Policy

Given the growing importance of the radio spectrum as a natural resource for the digital society, and building on the progress made under the [Radio Spectrum Decision \(676/2002/EC\)](#) [7], in 2012 the European Union established a [Radio Spectrum Policy Programme \(RSPP\)](#) [8] to define key policy objectives and set up general principles for managing radio spectrum in the internal market.

This programme supports the goals and key actions of the Europe 2020 initiative and the Digital Single Market and in particular focuses on:

- eliminating the digital divide;
- efficient use of spectrum;
- promoting investments, competition and innovation; and
- protecting general interest objectives such as cultural diversity and media pluralism.

The term radio spectrum generally refers to electromagnetic frequencies between 9 kHz (kilohertz) and 3000 GHz (gigahertz) with wavelengths between one millimetre and thousands of kilometres.

Proposed by the European Commission in 2010 and adopted by the European Council and the Parliament on [14 March 2012](#) [9], the RSPP also defines a [roadmap for the next steps](#) [8] in EU Radio Spectrum Policy. It focuses on the spectrum needs for [wireless broadband systems](#) [10]. Also the requirements of other areas (such as audiovisual, transport, research, environment protection or energy) are taken into account by the RSPP, while safeguarding essential defence, emergency or earth observation requirements.

Based on the policy objectives as defined in the RSPP, the European Commission together with all Member States will work to complete [the internal market for wireless innovation](#) [8].

On 14 September 2016, the Commission adopted in the context of the [EU Electronic Communications Code](#) [11], the Commission updated rules regarding the management of radio spectrum which aim at creating a stable regulatory environment, improving coordination of spectrum and reducing divergences between regulatory practices across the EU to boost the single market.

A common approach to spectrum regulation in Europe

All wireless technologies must transmit and receive information via the radio spectrum. Such transmissions can be used for a range of different purposes. However, in order to ensure that competing applications for radio spectrum do not interfere with each others' operations, it is essential to [coordinate the use of frequencies](#) [12] and properly regulate both nationally and internationally.

Maximising the economic benefits of the single European market needs coordination on a European scale: to harmonise spectrum access rules across borders. The overall aim of the [EU's Radio Spectrum Policy](#) [7] is therefore to coordinate the approach to radio spectrum management across the Union to foster modernised spectrum management, ensuring Europe gets the most benefit from its use of this finite resource, both now and in the future.

Three main goals: harmonisation, efficiency, availability

The three [main goals](#) [13] of the EU's Radio Spectrum Policy are to [harmonise spectrum access conditions](#) [13] to enable [interoperability and economies of scale for wireless equipment](#) [4], to work towards a more efficient use of spectrum, and to improve the availability of information about the current use, future plans for use and availability of spectrum.

Based on the EU's regulatory framework for electronic communications, the modernisation of spectrum management is aimed at facilitating spectrum access through more [flexibility in usage conditions](#) [14] and market-led mechanisms to manage spectrum usage rights, such as [spectrum trading](#) [15], as well as by introducing more efficient or intelligent technologies that can [share frequencies](#) [3] and the well targeted [re-allocation/re-purposing](#) [10] of spectrum for the internal market.

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Team responsible

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