

# **ANACOM CONFERENCE**

## **SPECTRUM MANAGEMENT**

### **perspectives, challenges, strategies**

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## **THE CURRENT REGULATORY FRAMEWORK AND ITS TRENDS**

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# Radio Spectrum

- ✓ **Set of electromagnetic waves occurring on the radio frequency portion of the electromagnetic spectrum that ranges from 3 kHz to 3000 GHz**
- ✓ **Natural resource**
- ✓ **Public domain (public good)**
- ✓ **Scarce resource**
- ✓ **Reusable**
- ✓ **Strategic value (social, economical, political, etc.)**

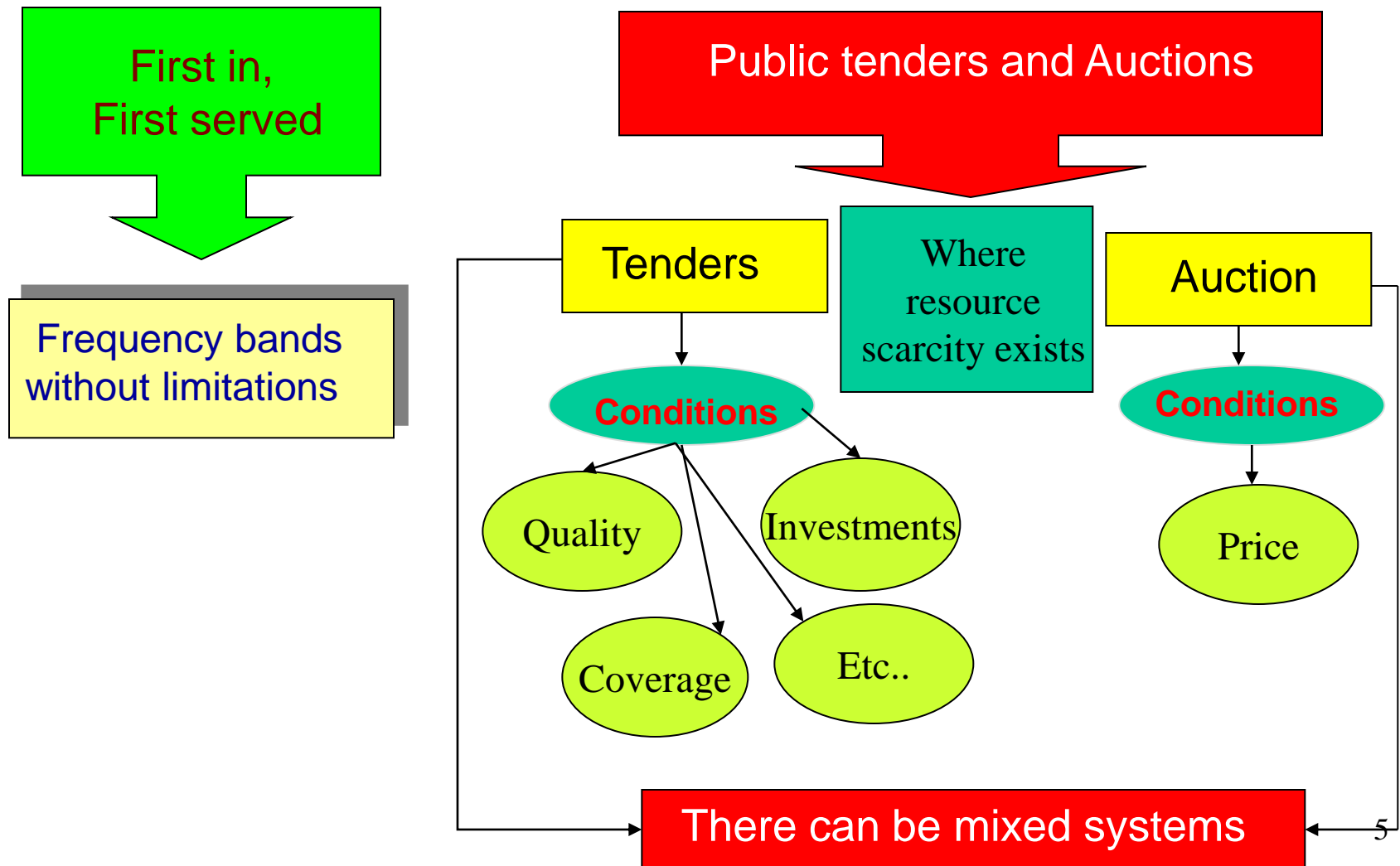
# COMPLEXITY IN THE PLANNING AND MANAGEMENT OF THE RADIO SPECTRUM

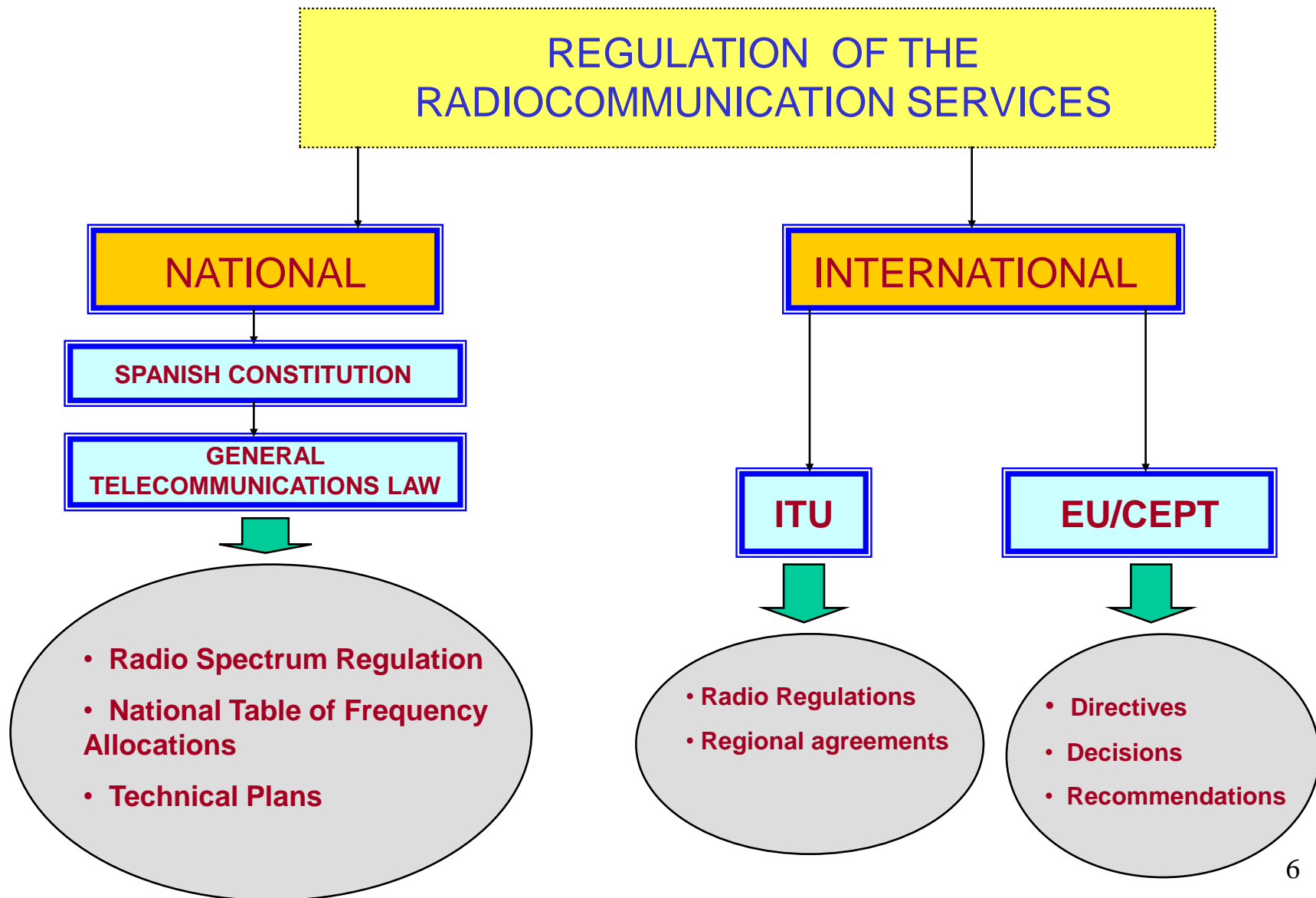
- High occupancy of the frequency bands.
- Need to foresee the development of new technologies and services.
- Re-allocating and refarming of the frequency bands.
- Frequency bands shared by several services.
- Complex compatibility analysis.
- Commercial products only for the planned frequency bands.
- Complex international coordination processes.

# **RADIO SPECTRUM PLANNING AND MANAGEMENT. Main objectives.**

- ✿ To ensure, by means of a suitable management, the efficient use of the radio spectrum.
- ✿ To deal with the demand of the radio spectrum users, promoting its usage as a economical development factor.
- ✿ To ensure an equitable, transparent and not discriminatory access to the radio spectrum resources.
- ✿ To fulfill the international obligations with regard to planning and management of the radio-frequency spectrum.
- ✿ To add new usages derived from technological innovations.

# Different possibilities for the frequency assignment





## INTERNATIONAL TELECOMMUNICATION UNION (ITU)

- ❑ International Organization of the United Nations system.
  - ❑ World and Regional Radiocommunication Conferences.
  - ❑ The Radio Regulations (RR) are reviewed during the World Radiocommunication Conferences.
  - ❑ Outcomes of WRCs have Treaty status.
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- ✓ RSPG adopts Opinions to assist the Member States and the EU with common approaches in order to bring the best out of the negotiations. The RSPG identify the main items of the WRC agenda related to EU policies and the common policy objectives in relation to those items.
  - ✓ Common positions in relation to WRC agenda items are developed by the European Conference of Postal and Telecommunications Administrations (CEPT).

- The electronic communications regulatory framework was put in place in 2002 and revised in 2009. Two key Directives, the Framework Directive and the Authorisation Directive, establish common general rules for the right to use radio spectrum for electronic communications.
- The allocation and management of radio spectrum in the European Union is administered by national administrations as **radio spectrum remains the responsibility of Member States**. The use and management of radio spectrum in the European Union have to take into account EU policies.
- The overall objective of the **EU's Radio Spectrum Policy** is to support the internal market for wireless services and equipment and to foster innovation in electronic communications and other sectors. This concerns four main areas of activity:
  - The **identification of needs for spectrum coordination** at EU level – including the monitoring of a wide range of EU policy areas which depend on radio spectrum, such as electronic communications, transport and research.
  - **Initiating harmonisation of spectrum usage** in individual bands across Europe where necessary.
  - The **establishment of policy priorities** in cases where there is conflict between different requests for spectrum use.
  - **Setting the regulatory environment** for access to radio spectrum, with the aim of easier and more flexible access by public and private users.



## EUROPEAN REGULATION

- **FRAMEWORK FOR RADIO SPECTRUM POLICY IN THE EU**

Decision n° 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 (Radio Spectrum Decision).

- The Radio Spectrum Decision allows the Commission to adopt implementing decision to harmonize technical conditions with regard to the availability and efficient use of spectrum for the proper functioning of the single market. For the preparation of the technical measures the Commission issue mandates to the **CEPT**.
- To assist the Commission, two complementary bodies facilitate consultation and to develop and support an EU Radio Spectrum Policy:
  - ✓ **Radio Spectrum Policy Group (RSPG).**
  - ✓ **Radio Spectrum Committee (RSC).**

- **RADIO SPECTRUM POLICY PROGRAMME (RSPP)**

Defines key policy objectives and sets up general principles for managing the radio spectrum in the internal market.

## **RADIO SPECTRUM POLICY GROUP (RSPG)**

- **Advisory group**, established under Commission Decision 2002/622/EC of 26 July 2002.
- High-level experts of the Member States and the European Commission.
- Contributes to the development of a radio spectrum policy in the EU.
- The RSPG approves Opinions.

## **RADIO SPECTRUM COMMITTEE (RSC)**

- Established under Commission Decision 676/2002/EC
- Is composed of Member States representatives and chaired by the Commission.
- Assist the Commission in developing technical implementation measures to ensure harmonised conditions across Europe for the availability and efficient use of spectrum.

## CURRENT TOPICS

- Strategic Challenges facing Europe in addressing the Growing Spectrum Demand for Wireless Broadband.
- Licensed Shared Access.
- Strategic sectoral spectrum needs .
- EU Assistance in Bilateral coordination.
- Preparation of Common Policy Objectives for WRC-15.
- Efficient interference management through exchange of regulatory best practices concerning regulation and/or standardisation.

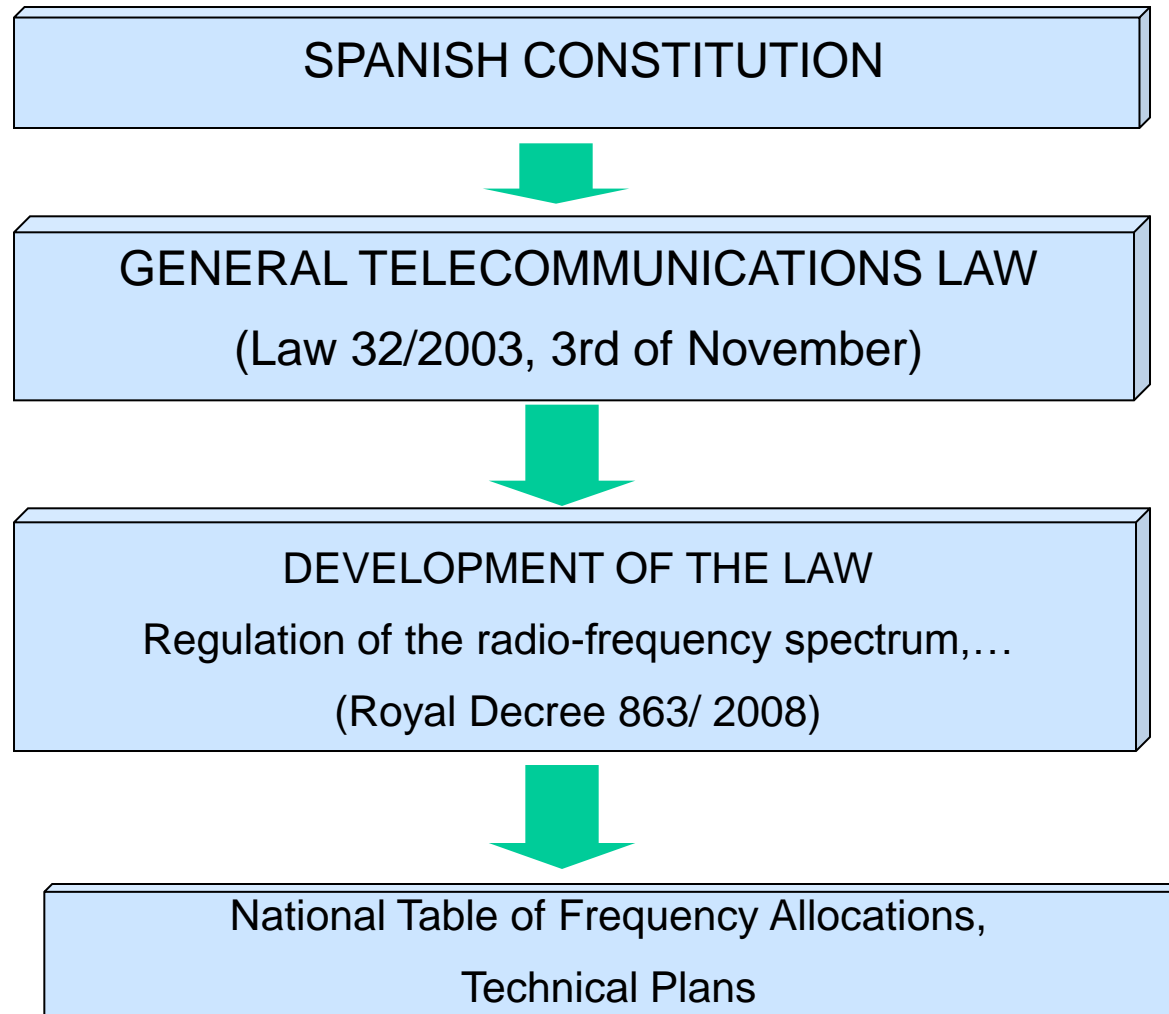
- On 14 March 2012, the European Parliament and Council approved the first Radio Spectrum Policy Programme (RSPP).
- Decision 243/2012//EU define key policy objectives and set up general principles for managing radio spectrum in the internal market. This programme supports the goals and key actions of the Europe 2020 initiative and the Digital Agenda for Europe and in particular focuses on eliminating the digital divide.
- The Decision sets general principles and calls for concrete actions to meet the objectives of EU policies.

## GENERAL REGULATORY PRINCIPLES

- applying the most appropriate and least onerous authorisation system.
- fostering development of the internal market and promoting competition and innovation.
- defining the technical conditions of the use of spectrum, taking full account of relevant Union law.
- promoting technology and service neutrality in the rights of use of spectrum.
- For electronic communications, additional specific principles:
  - applying technology and service neutrality in the rights of use of spectrum and the transfer or lease of individual rights of use of radio frequencies;
  - promoting the harmonisation of use of radio frequencies across the Union.
  - facilitating increased wireless data traffic and broadband services.

## POLICY OBJECTIVES

- sufficient and appropriate spectrum on time, at least 1200 MHz of suitable spectrum by 2015.
- bridge the digital divide and contribute to the objectives of the Digital Agenda for Europe, access to broadband at a speed of not less than 30 Mbps by 2020.
- promote innovation and investment: flexibility, technology and service neutrality, trading.
- general authorisations whenever possible to facilitate easy access to spectrum.
- maintain and develop effective competition.
- avoid fragmentation: fully exploit the potential of the internal market, economies of scale, harmonisation of technical conditions for the use and availability of spectrum.
- avoid harmful interference or disturbance, increase immunity of receivers to interference.



## Articles 43, 44, 45 y 49 of the GTL:

- The radio spectrum is a public good, which management, planning and control corresponds to the State.
- Exclusive matter of the State.
- Approval of the National Table of Frequency Allocations (Cuadro Nacional de Atribución de Frecuencias, CNAF) and National Technical Plans on radio and television.
- Granting of enabling titles for the usage of the radio spectrum.
- Tender procedure for the granting of rights of use when the number of licenses is limited.
- The Government will establish the conditions for the authorization of the transmission of certain rights of usage of the radio spectrum.
- The Ministry of Industry, Tourism and Commerce by means of the Telecommunications Inspection, is responsible for the control and inspection of the radio spectrum.
- License fee for the usage of the radio spectrum: its goal is to ensure the correct use of this resource, having into account the value and scarcity of the good. The total amount of the annual fee is determined by the market value of the usage of the reserved frequency and the potential profitability of its usage. Its calculation depends on the parameters established in Annex I of the GTL, these parameters are set by the Law on General State Budget.



**ROYAL DECREE 863/2008**

**REGULATION ON THE USAGE OF THE RADIO SPECTRUM**

**Royal Decree 863/2008, of 23 May, approves the regulation of development of Law 32/2003, of 3 November 2003, General Telecommunications Law, with regard to the use of the radio spectrum.**

**This Regulation develops the principles established by the General Telecommunications Law, with regard to the management of the radio spectrum. It regulates the planning, management and control of the radio spectrum and updates and improves the former regulation to the new market issues and to the current status of the technology.**

NATIONAL REGULATION OF THE RADIO SPECTRUM

ROYAL DECREE 863/2008

## Objectives of the Spectrum Regulation (Art. 2)

*“Are objectives and principles underlying this regulation the following:*

- a) Ensure, through a proper management, the effective and efficient use of the radio spectrum.*
- b) Promote the use of the spectrum as a factor of technical, economic, security, public interest, social and cultural development.*
- c) Ensure equitable access to radio resources throughout open, transparent, objective and non-discriminatory procedures.*
- d) Promote the development and utilization of new services, networks and technologies, and access to them for all citizens.*
- e) Regulate the transfer of rights to use radio spectrum.*
- f) Contribute to an harmonized normative development in the European Union in order to facilitate the introduction of global systems of communication.*
- g) Facilitate strategic planning for the telecommunications sector and, in particular, communications related to the national defense as well as civil protection and emergency services.*
- h) Promote service and technology neutrality as elements which will provide more flexibility in the efficient use of the radio spectrum.*
- i) Promote greater competition in the electronic communications markets.*
- j) Promote efficient investment in infrastructures and encourage innovation.”*

## National Table of Frequency Allocations

- ❑ **Allocations, at a national level**, of the different frequency bands to several radiocommunication services.
- ❑ **It reflects the results of the World Radiocommunication Conferences, Decisions of the European Commission, Decisions and Recommendations from CEPT adopted by Spain, as well as those other ways of spectrum management at national level.**
- ❑ **It is prepared with a regularity of approximately 2 years and is approved by Ministerial Order.**
  - The current version was approved by the Ministerial Order IET/787/2013, of April 25.

- General Telecommunications Law 32/2003 was adopted in Spain on 5 November 2003. It transposed into national law the EU Directives of 2002.
- Law 32/2003 has been amended several times, last one by Royal Decree-Law 12/2012, and is fully adapted to the 2009 EU Directives.
- On 13 September 2013 the Spanish Council of Ministers approved a draft of new General Telecommunications Law to adapt the legislation in line with changes that have taken place in the telecom sector over the last years.
- The draft law has been submitted to Parliament for consideration.

## MAIN OBJECTIVES

- Facilitate the deployment of new generation networks (NGNs), fixed or mobiles, improving its coverage and reducing costs.
- Boost of competition and improvement of services for users. Periodic analysis of different markets.
- Restore market unity, narrowing the legal dispersion. Unique national maximum limits of the exposure of the general public to electromagnetic fields.
- Elimination and minimization of administrative burdens to operators.

## MAJOR DEVELOPMENTS IN SPECTRUM

- **Introduction of a new type of license for spectrum use: the general authorization:**
  - ✓ It will be granted in the event of special use of frequency bands authorized for that purpose through public electronic communication networks deployed or managed by electronic communications operators.
  - ✓ Only requires a notification to the Secretary of State of Telecommunication and Information Society, through the procedure and the requirements established by ministerial order.
- **More supervision of spectrum use.**
  - ✓ Active spectrum protection.
  - ✓ Prohibition for operators managing networks or providing electronic communications services, to allow other persons or entities to use its network for radio emissions, if they do not dispose of the correspondent authorization for spectrum use.
- **Limitation on the duration of the licenses for the use of the spectrum.**
  - ✓ Maximum of 20 years and not renewable.