

ANNEXES

SPECTRUM MANAGEMENT STRATEGY STATEMENT 2005 - 2007

Commission for
Communications Regulation

Annex 1

National Framework for Spectrum Management in Ireland

The main aspects of this framework are summarised in this Annex.

A1.1. Role of ComReg

In Ireland, ComReg is the National Regulatory Authority (NRA) responsible for the regulation of the electronic communications sector (telecommunications, radiocommunications and broadcasting²⁴ transmission). In carrying out its role in relation to radio spectrum management ComReg must:

- take into account policy directions issued by the Minister for Communications, Marine and Natural Resources;
- ensure that measures taken are proportionate in meeting its objective to ensure the efficient management and use of the radio spectrum
- have regard to international developments with regard to the radio frequency spectrum.

ComReg reports on its activities in respect of radio spectrum through public consultations and its annual reports.

A1.2. Summary of the Irish Legislative Framework for Spectrum Management

The Communications Regulation Act, 2002 (No. 20 of 2002) established the Commission for Communications Regulation (ComReg) and defined its functions and objects.

Until 2003, the WT Acts 1926-1988 provided the licensing framework for radio systems in Ireland. Under the WT Act 1926, an authorisation is required in order to keep and have apparatus for wireless telegraphy²⁵ and this authorisation generally takes the form of a licence or a licence exemption created under secondary legislation. ComReg has the authority to develop secondary legislation to permit the licensing or licence exemption of different types of wireless apparatus.

The primary legislation applicable to the Broadcasting sector comprise the Broadcasting Authority Act 1960 as amended, the Broadcasting and Wireless Telegraphy Act, 1988, the Broadcasting Act 1990, the Radio and Television Act, 1988 and the Broadcasting Act 2001. Irish television and radio broadcasters are licensed for the use of spectrum and apparatus under the Broadcasting Authority Act 1960 (in the case of RTÉ) and under the Radio and Television Act 1988 (in the case of the BCI contractors). MMDS and deflectors (which allow for the distribution of programme services in Ireland over the air in the 470 - 862 MHz band) are licensed by ComReg under the WT Act 1926. Broadcasting distribution and transmission systems are subject to the new EU regulatory framework for electronic communications networks and services.

²⁴ In relation to broadcasting ComReg's role is limited to spectrum management and assignment issues. Broadcast policy is decided by the Minister for Communications, Marine and Natural Resources and content issues are regulated by the BCI and the RTÉ Authority.

²⁵ Apparatus for wireless telegraphy is defined in the WT Act, 1926 (No. 45 of 1926) as "apparatus for sending and receiving or for sending only or for receiving only messages, spoken words, music, images, pictures, prints, or other communications, sounds, signs, or signals by wireless telegraphy and includes any part of such apparatus and any article primarily designed for use as part of such apparatus and not capable of being conveniently used for any other purpose".

In July 2003 a new regulatory framework for communications came into force. This had a significant impact on the manner in which the communications sector is regulated throughout Europe. The framework comprised 5 Directives²⁶ (Framework, Authorisation, Access, Universal Service and Data Protection) and one Decision (Spectrum Decision) and it aimed to promote competition, the interests of the citizen (universal service, consumer protection, privacy, dispute resolution) and the single European market.

The new framework regulations do not replace the WT Acts 1926-1988 but take priority over it. Since 2003, licensing of wireless electronic communications services and networks under the WT Acts must be done in accordance with the requirements of the framework regulations.

In the next 2 to 5 years it is expected that a number of new Bills relating to the regulation of the electronic communications sector will be enacted. These include a new Telecommunications (Miscellaneous Provisions) Act, a new Radiocommunications Act, which will replace the Wireless Telegraphy Acts 1926-1988, and a new Broadcasting Act. The implications of this new legislation will be included in future strategy documents.

²⁶ Available at http://europa.eu.int/information_society/topics/telecoms/regulatory/new_rf/

Annex 2

Summary of the Economic and Social Impact of Radio Spectrum Use

A2.1. Introduction

A key consideration in developing a strategy for radio spectrum management is the extent to which use of the radio spectrum contributes to the Irish economy. Research carried out on ComReg's behalf by Aegis Systems and Indepen Consulting, based on publicly available data, concluded that the total contribution to Irish GDP arising from the use of radio spectrum in 2003 was nearly €2 Billion, or approximately 1.4% of total GDP. A conservative estimate of the number of employees in Ireland whose jobs are dependent on the use of radio spectrum was over 24,000²⁷.

These figures highlight the importance of radio spectrum to the Irish economy. The social benefits arising from use of the radio spectrum are also considerable. Efficient functioning of the Gardaí, fire and ambulance services, for example, depends on reliable mobile communications, whilst radio plays a major role in enabling the Irish Defence Forces to carry out their duties both at home and overseas. Radio is fundamental to the safe operation of air, sea and land transport and Ireland plays a particularly important role in managing international radio traffic in the aeronautical sector, dealing with over 70% of all transatlantic flights. It is therefore clear that the contributions of the defence, public safety and transport sectors to society and the economy is heavily dependent on access to radio spectrum.

Two different approaches to measuring the economic contribution of radio communication were used in the Aegis/Indepen study. The first approach involves measuring the contribution to Irish Gross Domestic Product (GDP) and employment associated with radio using services, while the second involves estimating the benefit consumers and producers derive, termed consumer surplus and producer surplus respectively, from radio based services. In both cases data limitations mean that the most robust estimates are obtained for public cellular (mobile) and broadcasting services and only partial estimates are possible for other services.

A2.2. GDP and Employment Contribution

The following table shows the estimated contribution to GDP and employment for each of the main uses of radio spectrum. Data for maritime services has not been included as it is not possible to determine the extent to which these depend on radio (unlike aeronautical services, most maritime activities could be undertaken without radio spectrum, albeit with reduced efficiency and safety).

The approach taken to determining the contribution of radio spectrum to GDP was to include the direct revenue contribution of the relevant operators in each sector in conjunction with estimates of the forward and backward linkages in the economy, which were based on the value chains for spectrum using sectors. For example, for mobile services this approach included revenue generated from mobile retailing and software, security and other suppliers to the mobile sector and for broadcasting services included revenue generated through forward links to the advertising industry. Full details of the methodology used for each service and the figures in each category are contained in ComReg Documents 05/01 and 05/36. The wider impacts on the economy as a whole were estimated using a general economic multiplier of 1.1 to arrive at the final figures in the table below.

²⁷ These estimates are likely to understate the total contribution as it was not possible to value all services, because of lack of suitable data.

The employment effects were estimated directly where suitable data was available, for example from annual reports and where this was not possible the average estimates of value added per employee were obtained from industry statistics (Central Statistics Office) and used to obtain figures for employment levels. The figures for broadcasting include contributions from the broadcast advertising industry, TV and radio.

	GDP (€m)		Employment	
	2002	2003	2002	2003
Mobile	569	834	8551	7928
Broadcasting	208	265	4310	4331
Fixed links ²⁸	1	1	20	20
Air services	498	600	11988	11829
Short range devices	230	230	581	581
Other services	14	14	330	330
Total	1520	1944	25780	25019
% of total economy	1.1	1.4	1.4	1.4

Table A2.1: Summary of GDP and employment impacts

In addition, estimates of consumer and producer surplus have been produced for some services and these are summarised in Table A2.2 below. Again the estimates are partial but they indicate there is very substantial benefit to consumers and industry from use of the radio spectrum. Note that the consumer surplus figures may underestimate the benefits of TV broadcasting since they do not take account of terrestrial TV services originating outside Ireland. Similarly, the GDP contribution from the mobile sector is likely to be understated as this does not include certain indirect contributions, such as the distribution of mobile phones or additional services that might be facilitated by mobile communications.

Service	Consumer and producer surplus (€m)
Mobile	1625
Broadcasting	290
Fixed links and satellite	645
Business radio	56

Table A2.2: Summary of GDP and employment impacts

²⁸ Fixed link figures exclude infrastructure links for mobile and broadcast networks which are included in those sectors. Estimates are based on number of licensed links and typical maintenance costs.

Annex 2

Summary of the Economic and Social Impact of Radio Spectrum Use

Continued

A2.3. Consumer and Producer Surplus

The economic concept of welfare can be used to capture the economic and other benefits of a resource such as the radio spectrum. Welfare can be measured as the total 'surplus' associated with the allocation of scarce resources and is made up of consumer and producer surplus. Consumer surplus is the cumulative difference between the willingness to pay for a good and its price. Producer surplus is the cumulative sum of the difference between the price of a good and what a firm is willing to be paid to produce the good i.e. 'supernormal profit'.

In the case of the mobile and the broadcasting sector the estimates of consumer surplus were based on existing UK and Irish willingness to pay studies for the uses of spectrum. The UK studies were used to generate ball park estimates of consumer surplus under certain assumptions, for example that the benefits that consumers enjoy from the services and the nature of the services are very similar. The producer surplus for mobile services was calculated by looking at the rate of return on capital employed in the mobile business, as estimated in the ComReg market analysis paper on mobile access and call origination and the average of the reported rate of return on capital set by regulators in Europe.

In the case of fixed services and VSAT satellite services the efficiency benefit (i.e. cost reductions) of the use of these services as compared with the use of alternative technology or services, such as leased lines was used to provide an analogous measure to consumer surplus.

ComReg considers that the efficient management of spectrum contributes to economic growth by supporting the development of knowledge based services and attracting foreign investment; promoting competition in communications services, promoting the competitive provision of radio based equipment and by supporting the development of new and innovative services in a timely manner.

Efficient use of radio spectrum also benefits the economy through the additional economic activity associated with use of the resource and the efficiencies that use of radio technology enables. For example, mobile phone companies and companies that provide software and other services to the mobile phone industry would not exist without access to radio spectrum. This is not to say that all of the output and employment associated with these sectors would be lost if the radio spectrum they use was not available because in these circumstances consumers would make expenditures on other goods and services. However, costs to business would be increased, as they would have to use less efficient forms of communication and this in turn would have a negative impact on consumer wellbeing as they spend more on less convenient goods and services.