

Appendix C



DRAFT REGULATORY IMPACT ASSESSMENT

Provision of Public Telecommunication Services in Licence-Exempt Spectrum

[February 2002]

The Radiocommunications Agency is an Executive Agency of the Department of Trade and Industry.

The Agency's website is located at www.radio.gov.uk

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1. Working title

Provision of Public Telecommunication Services in Licence-Exempt spectrum

2. Issue

All use of the radio spectrum is subject to licensing under the Wireless Telegraphy Act (1949) unless specifically exempt by regulations. Radio equipment that is exempt from licensing under Exemption Regulations includes most low powered short-range devices and mobile terminals used with public networks.

There is a potential demand, particularly in areas of dense use, for short-range broadband wireless connection to public telecommunication networks to provide customers with, for example, improved Internet access. Current Exemption Regulations defined in Statutory Instrument SI 1999 930 prevent use of licence-exempt spectrum for such applications by specifically prohibiting use of these bands for the provision of services to third parties by way of business.

Advances in technology have provided intelligent radio devices which can dynamically control their access to radio spectrum such that large numbers of compatible terminals can operate satisfactorily even when used within interfering range of one another. In the light of these advances, there is a need to reconsider the current Exemption Regulations and the possibility of allowing licence-exempt public services in certain frequency bands.

3. Objective

The change in Exemption Regulations is intended to increase the market potential for broadband communications; increase competition and consumer choice; provide a stimulus for innovative radio technologies, and improve the overall economic benefit from licence-exempt spectrum.

4. Risk assessment

4.1 Risk from maintaining the existing regulations

There is a risk that the future demand for short-range broadband public access telecommunication services could exceed the supply of licenced spectrum in certain areas. This would delay, or even prevent, the introduction of new products and services.

New broadband radio technologies, which have the potential for efficient and effective shared use of the limited spectrum resource, are particularly suitable for deployment in uncoordinated licence-exempt bands. Maintaining the current Exemption Regulations would mean that there is a risk that the potential for new technologies, operating efficiently in uncoordinated licence-exempt spectrum, to address problems of congestion in areas of high demand for broadband public telecommunication may be missed.

4.2 Risk from changing the existing regulations

There is a risk that public services operating in licence-exempt spectrum may not be able to maintain a satisfactory grade of service, particularly in locations where there is an unusually high demand. It is not clear how much spare capacity currently exists in licence-exempt bands and further, the limitations of new technologies in dealing with peak demand in public telecommunication services.

Some existing licence-exempt devices would also be incompatible with new public services. There may be increased instances of interference to these devices as a consequence of more intense use of spectrum, causing them to function less reliably. A change in regulations could therefore see some of these devices displaced in favour of more robust, spectrally efficient technologies, representing a cost to manufacturers in developing new products and/or markets, and existing users in terms of replacement devices. But the overall improvement in efficient use of licence-exempt spectrum, the opportunity for product innovation, and the availability of new services is expected to result in a net increase in economic value of the bands.

5. Options for future Exemption Regulations

There are three possible regulatory options for allowing public services access to licence-exempt spectrum:

- **Option 1:** Maintain the status quo; that is retain existing restrictions in the current Exemption Regulations but allow access to licence-exempt spectrum for public telecommunication services through issue of individual licences, subject to impact on existing services. The current situation is that only one public service provider has a licence to operate in licence-exempt frequency bands, and this is limited to specific geographic areas and without protection from other, licence-exempt services;
- **Option 2:** Relaxation of the current Exemption Regulations to allow public telecommunication services to operate without a licence, but with a number of conditions to limit how and where the spectrum is used in order to limit congestion. These conditions might include restricting the use of spectrum to indoor applications;
- **Option 3:** Remove the prohibition of public telecommunication services from existing Exemption Regulations and allow services to be established with the minimum possible regulatory constraints, relying on technological solutions to limit congestion.

6. Identifying the Benefits

The benefits of allowing public services to operate in licence-exempt spectrum are expected to be an increase in the provision of affordable broadband telecommunication provision; product innovation, creation of new markets, and a net increase in the economic value of licence-exempt bands. These benefits need to be considered in the context of each of the business sectors and users likely to be affected.

6.1 Business Sectors and end users affected

Those likely to be affected by the regulatory options for licence-exempt spectrum are:

- (i) **End users**, namely, those individuals using a range of different consumer products that operate in licence-exempt frequency bands;
- (ii) **Public service providers**, namely operators of public telecommunication networks including possible new entrants;
- (iii) **Public service customers**, namely those individuals and businesses that subscribe to a public telecommunication network, including those that might subscribe to new licence-exempt public services;
- (iv) **Equipment manufacturers** namely those companies that produce equipment for private use in licence-exempt spectrum and who may also manufacture or supply terminal equipment for use with a public telecommunication network.

6.2 Identifying and Evaluating the Costs and Benefits

Associated with any future Licence Exemption Regulations, there will be costs and benefits to each of the business sectors and end users identified in section 6.1 above. These are identified in tables 1, 2 and 3 below, for each of the three regulatory options respectively.

Table 1: Expected Costs and Benefits of Option 1

“Maintaining the status quo - no licence-exempt public telecommunications”

Business Sector or User affected	Benefits	Costs	Net Benefits
End Users	Access to same amount of spectrum		Potentially positive
Public Service Providers		Loss of potential market	Potentially negative
Public Service Customers		Loss of potential new products/services	Potentially negative
Equipment Manufacturers	Existing suppliers continue to supply existing market.	Loss of potential customers	Potentially negative

Table 2: Expected Costs and Benefits of Option 2

“A light regulatory regime with limitations on use of licence-exempt spectrum for public telecommunication”

Business Sector or User affected	Benefits	Costs	Net Benefits
End Users	Ability to use public services	Less spectrum available Reduction in quality of services Licence-exempt services exiting the market	Depends on end users willingness to pay for new and old services.
Public Service Providers	Increase in revenue from entering new market Access to low cost spectrum Ability to offer new services	Cost of complying with ‘light’ regulation Cost of equipment Operating costs of providing public network	Depends on type of constraints the RA imposes on public users and demand for public services.
Public Service Customers	Increase in choice through new products/services Lower prices as a result of increased competition of public networks	Increase cost-subscription charge	Depends on end users willingness to pay for new and old product/services.
Equipment Manufacturers	Increase in profits from new public telecommunication equipment	Decrease in profits from licence-exempt spectrum	Depends on demand and supply of equipment

[N.B. the benefits and costs associated with this option will depend upon the detail of any "light regulations" applied. This may require a number of possible "light regulatory" options to be considered in the final Regulatory Impact Assessment.]

Table 3: Expected Costs and Benefits of Option 3

“Full de-regulation – use of licence-exempt spectrum for public telecommunication”

Business Sector or User affected	Benefits	Costs	Net Benefits
End Users	Increase if public service provider is a cost-effect substitute	Increase in costs as a result of congestion/interference Quality of service is reduced Less spectrum available	Depends on number of licence-exempt spectrum users, price and availability of substitutes.
Public Service Providers	Increase in revenues from entering new market Ability to offer new services Access to low cost spectrum	Cost of new equipment Operating costs of a network	Depends on demand for their radio services.
Public Service Customers	Increase in choice due to new products/services Lower prices as result of increased competition of public networks.	Increase in cost (i.e subscription charge)	Depends on willingness to pay for existing products/services and new products/services.
Equipment Manufacturers	Increase in profits from new public service provider equipment	Decrease in profits from licence-exempt equipment	Depends on demand, and supply of old and new equipment.

7. Results of Consultations

N.B. This section will be further developed and completed in the light of responses to the national consultation. The consultation document, of which this draft RIA is part, was published on the RadioCommunications Agency's website (www.radio.gov.uk) on 12th October 2001 and was simultaneously sent to all five current licensed mobile telecommunication operators and identified trade associations. A period of 3 months is being allowed for replies, with a closing date for comments of 11th January 2002.

The Agency has also commissioned an independent study of the technical and economic implications of each of the proposed regulatory options identified. The study, which will be completed during the period of the consultation, is to be carried out jointly by Mason Communications Limited and DotEcon Limited.

The results of the national consultation and the independent study will be used to further confirm the expected benefits of each of the regulatory options, with estimates of consumer and producer surplus.

8. Summary and Recommendations

N.B. This section will be completed in the light of responses to the national consultation and the outcome of independent technical and economic studies.