



Wireless Telegraphy Licence Exemption

Amending the Wireless Telegraphy (Exemption)
Regulations 2003

Consultation

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Section 1

Executive Summary

Introduction

- 1.1 In the United Kingdom, Ofcom is responsible for the authorisation of civil use of the radio spectrum and achieves this by granting Wireless Telegraphy (“WT”) licences under the Wireless Telegraphy Act 1949 (the “1949 Act”) and by making Regulations exempting users of particular equipment from the requirement to hold such a licence. Under section 1 of the 1949 Act, it is an offence to install or use equipment to transmit without holding a licence granted by Ofcom, unless the use of such equipment is exempted.
- 1.2 Exemption is realised by describing the details of equipment and the parameters under which it may be used in a Statutory Instrument (secondary legislation called Regulations) which exempts users of such equipment from the need to hold a WT Licence provided they comply with the terms of the Regulations. This documents contains proposals to modify existing Regulations for a number of reasons:
- Wherever possible Ofcom seeks to reduce the regulatory burden upon its stakeholders. One way in which it can do this is to remove the need for spectrum users to apply for individual licences to authorise the use of radio equipment.
 - Ofcom aims to support the development of innovative radio technologies and applications. The document contains proposals to enable a range of such new technologies to be introduced into the UK and to operate on a licence-exempt basis, or to modify existing arrangements to reflect the evolution of existing technologies.
 - Ofcom is responsible for implementing European Commission (EC) Directives or Decisions relating to radio spectrum. Such measures are binding on the UK and must be reflected in UK arrangements. This document sets out plans for implementing a range of new EC Decisions, and also some voluntary harmonisation measures designed to support the single market.
- 1.3 Ofcom plans to implement these changes by amending the current Wireless Telegraphy Exemption Regulations (the “Exemption Regulations”) which came into force in 2003.

Overview of Proposed Changes

- 1.4 This consultation document contains a wide range of proposals to change arrangements for licence exemption in the UK which include:
- Citizens’ Band (CB) Radio – Measures to remove the need for users of CB radio, of which there are currently 20 thousand, to obtain a licence from Ofcom;
 - “Micro” FM Transmitters – These devices are designed to facilitate easy connection between audio sources (such as digital audio devices and MP3 players) and normal FM broadcast receivers by way of a radio link. Ofcom propose to permit the use of these devices on a licence-exempt basis;

- Measures to permit the use of a range of new technologies and novel applications of radio without the need for users to obtain a licence from Ofcom:
 - Inmarsat BGAN and High Density Fixed Satellite Service (HDFSS) satellite terminals;
 - Narrow band use of 24GHz for short range radar (including automotive applications);
 - Radar Level Gauges;
 - Digital PMR 446 (“walkie talkies”).
- Measures, which are binding on the UK, to implement and ensure compliance with the following European Commission Decisions:
 - *The draft EC Decision establishing a framework for the harmonization of radio spectrum for use by short-range devices in the Community*: It is our expectation that the European Commission will imminently issue this Decision, and whilst arrangements in the UK are already largely compliant with it we propose a number of minor changes that will bring the UK fully in line with the Decision.
 - *Commission Decision 2005/928/EC of 20 December 2005 on the harmonisation of the 169.4-169.8125 MHz frequency band in the Community*: This Decision makes spectrum available for a range of applications including hearing aids, social alarms and asset tracking.
 - *Commission Decision of 11 July 2005 on the harmonised use of radio spectrum in the 5 GHz frequency band for the implementation of wireless access systems including radio local area networks (WAS/RLANs) 2005/513/EC*: Although existing arrangements are believed to be fully compliant we propose some minor changes to bring terminology fully into line with the Decision.
- A range of additional measures to harmonise, on a voluntary basis, with Europe where such measures are viewed as beneficial.
- Editorial and minor changes designed to improve the clarity of current exemption arrangements and bring them fully up to date.

1.5 The detail of, and rationale for, each of the new exemption propositions is explained more fully in the relevant sections of this document. In addition further detailed technical information is provided, where appropriate, in the annexes to this document.

Document Structure

- 1.6 Section 2 provides general background to the policy and deregulatory framework of licence exemption.
- 1.7 Sections 3 to 11 describe proposals related to equipment exemption.
- 1.8 Section 12 describes the proposed editorial amendments to the 2003 Exemption Regulations.

- 1.9 A summary of the questions raised in this consultation is set out in Annex 1 and a Regulatory Impact Assessment can be found in Annex 2.
- 1.10 Annex 3 sets out the draft Interface Requirement 2030. This document specifies the acceptable technical parameters for operation in the UK on short range devices. The 2003 Exemption Regulations cross refer to IR2030 rather than listing the technical detail in the SI itself.
- 1.11 Annex 4 contains the Draft EC Decision covering short range devices.

Next steps

- 1.12 Following the closure of this consultation and having considered responses, Ofcom will issue a statement including the draft exemption Regulations which should, allowing for issues raised in response to this consultation, implement the proposals outlined in this document. It is a statutory requirement that Ofcom consult for one month on the draft exemption Regulations and at the end of this period Ofcom will seek to bring the Regulations into force. It is our current expectation that the new Regulations will be in force by December 2006.

Section 2

Introduction

Background

The need to regulate the radio spectrum

- 2.1 The radio spectrum is a finite resource of considerable economic and social value. Spectrum is essential for modern communications and broadcasting, for the effective operation of military and emergency services, and for safe and efficient transport and other infrastructure systems. It also has many scientific, social and educational applications.
- 2.2 Clearly this vital resource demands careful management. The effective use of spectrum can be disrupted by interference. This is caused if two or more users in close proximity transmit on the same frequency at the same time. The result can so degrade a radio signal that it becomes indecipherable and thereby ineffective. Consequently spectrum use has to be planned and managed to prevent radio signals from interfering with each other. To do this Ofcom usually grants the right to transmit on a particular frequency over a particular geographical area. By making sure that anyone else using the same frequency is sufficiently far away, most forms of interference can be avoided. This right to transmit is usually issued by Ofcom in the form of licence issued under section 1(1) of the Wireless Telegraphy (WT) Act 1949. In fact all use of radio equipment requires such a licence unless it has been specifically exempted from the need to possess one through a process called “Licence Exemption” and implemented through Exemption Regulations made under the WT Act using a Statutory Instrument (SI).
- 2.3 This document sets out proposals to change the current Regulations for licence exemption in order to reduce the regulatory burden on stakeholders and to allow new technologies to operate on a licence-exempt basis.

What is Licence Exemption?

- 2.4 Every day, most of us use radio devices that do not need a licence having previously been through the licence exemption process. These licence-exempt devices range from wireless headsets, cordless phones and car key-fobs to baby monitors, garage door openers and WiFi systems. Licence-exempt applications are also used in industry, including anti-theft systems in shops, identity cards that activate doors and in some cases for data links to remote base stations.
- 2.5 In making a device exempt from licensing Ofcom normally carefully specifies the characteristics of the equipment that can be used. A key issue is to limit a device’s transmitting power; radio signals from high-powered devices travel further, increasing the chances of interference with others using the same frequencies. If this occurs, the frequencies will become of limited use (licence-exempt devices are also commonly referred to as low power or short-range devices (SRDs)). Users need to be aware that there are no guarantees that the spectrum will be free of interference. However, by defining the maximum transmit power, along with other characteristics of equipment it exempts Ofcom can keep the probability of interference low.

Policy Framework

- 2.6 Ofcom seeks wherever possible, to reduce the regulatory burden upon its stakeholders, in this instance users of the radio spectrum. One way in which it can do this is to remove the need for spectrum users to apply for individual licences to authorise the use of radio equipment. In line with section 1(1) of the WT Act 1949, the use of Wireless Telegraphy (WT) equipment in the UK is authorised either by the issue of an appropriate WT Licence or through the specific exemption from the need to hold such a licence. Exemption is realised by describing the details of equipment and the parameters under which it may be used in a Statutory Instrument (secondary legislation called Regulations) which exempts users of such equipment from the need to hold a WT Licence provided they comply with the terms of the Regulations.
- 2.7 In accordance with the Communications Act 2003 Ofcom aims to exempt from licensing the use of specified equipment where it is not likely that such use will cause undue interference to other legitimate users of the radio spectrum or is contrary to an international obligation. Ofcom is also required to implement European Community (EC) Directives or Decisions relating to radio spectrum and from time to time this requires licence exemption arrangements to be changed.
- 2.8 Qualification for exemption is related to the nature of the equipment and frequencies being used. Factors influencing whether undue interference occurs are:
- the particular frequency assigned for transmission;
 - the power of transmission;
 - the use of the equipment; and
 - the compliance of equipment with agreed national or international standards (whichever takes precedence).
- 2.9 When considering frequencies suitable for exemption, Ofcom must take into account the difficulties involved in subsequent re-allocation of this spectrum. The problem arises due to the nature of licence-exempt use i.e. either no or very little data exists on who is using the spectrum, where they are using it, and for what purpose. This means that changing the designated use of the spectrum takes time and is difficult to do.
- 2.10 From time-to-time Ofcom will make new exemption Regulations, or amend existing ones. It may do this for a number of reasons such as enabling the use of a new low power technology where Ofcom believes consumers will benefit, to reflect developments in technology for types of use already exempt from licensing, or where Ofcom believes there are benefits from removing certain existing radio users from the need to possess an individual licence. This consultation sets out a range of proposals to extend and modify existing arrangement for licence exemption in the UK.

Current legislation

- 2.11 Currently there are a number of Regulations that exempt Wireless Telegraphy transmitting equipment from the need to have an individual licence. The relevant Regulations are as follows:
- The Wireless Telegraphy (Exemption) Regulations 2003;

- The Wireless Telegraphy (Radio Frequency Identification Apparatus) (Exemption) Regulations 2005;
 - The Wireless Telegraphy (Automotive Short Range Radar) (Exemption) Regulations 2005; and
 - The Wireless Telegraphy (Automotive Short Range Radar) (Exemption) (No.2) Regulations 2005.
- 2.12 Additionally, WT equipment operating on specified frequencies under suppressed radiation conditions for testing or development purposes are exempt from the need to hold a WT licence by the Wireless Telegraphy (Testing and Development Under Suppressed Radiation Conditions) (Exemption) Regulations 1989.
- 2.13 In terms of clarity and stakeholder understanding and particularly for radio suppliers and equipment manufacturers, Ofcom believes there are benefits in minimising the number of separate Regulations that define equipment which is licence-exempt, and the 2003 Regulations represented a substantial consolidation of a range of existing Regulations into a single SI. However, there have been certain circumstances where it has been necessary to make separate Regulations, such as when we have had to urgently implement a EC Decision. Nonetheless, we continue to endeavour to minimise the number of separate Regulations and for this reason we intend to apply the proposed changes to exemption arrangements set out in this document by amending the 2003 consolidated exemption Regulations.

Proposals to amend the 2003 Exemption Regulations

- 2.14 This document discusses proposals to amend the 2003 Exemption Regulations in order to allow new types of equipment to operate on a licence-exempt basis or to amend arrangements for frequency bands and equipment which are already subject to licence exemption.
- 2.15 The changes to the 2003 Exemption Regulations outlined in this document address a range of areas and fall into three broad categories:
- New requirements – where use of equipment is being made newly licence-exempt either because we are removing the need for an individual licence from an existing (licensed) type of use or introducing a new technology on a licence exempt basis. Changes in this category include:
 - Citizen's Band Radio;
 - FM Transmitters;
 - Inmarsat BGAN and HDFSS satellite terminals;
 - Narrow band use of 24GHz for short range radar (including automotive applications);
 - Radar Level Gauges;
 - Digital PMR 446.

- Changes to existing exemptions in relation to some short range devices – where currently specified conditions in the 2003 Regulations need to change for the following reasons;
 - to comply with European Commission Decisions; and
 - to harmonise with Europe where such measures are viewed as beneficial;
 - Editorial changes – to improve the clarity of drafting in the 2003 Regulations, update relevant cross references and update references to the legacy regulator (the Radiocommunications Agency) which no longer exists, to Ofcom which is now the regulatory body with responsibility for managing the radio spectrum.
- 2.16 The rationale for each of the new exemption propositions is explained more fully in the subsequent specific sections of this document.

The R&TTE Directive

- 2.17 The Radio and Telecommunications Terminal Equipment (R&TTE) Directive is part of a series of European Directives that simplifies the procedures for placing on the market, free circulation and putting into service of radio and telecommunications terminal equipment. It was adopted into UK law in April 2000. The Directive covers equipment and its relevant components that are capable of communication by the emission and / or reception of radio waves (i.e. radio equipment) and / or enabling communication by connecting to the interface of public telecommunications networks (i.e. telecommunications terminal equipment). Under the European Directives, it is the person responsible for placing equipment on the UK market who must declare that it is compliant with the R&TTE Directive and any other applicable European directives. They must indicate an equipment's compliance by marking it with an appropriate CE mark, providing consumers with clarity as to the status of the equipment in relation to the Directive. Licence-exempt devices put into service after April 2000 must be compliant with the R&TTE Directive.
- 2.18 The European Telecommunication Standards Institute (ETSI) produces “harmonised” equipment standards for most licence-exempt equipment. Compliance with these standards provides an assumption of conformity with the Directive, and the use of these standards has proved by the far the most popular way for manufacturers and suppliers to ensure compliance with the R&TTE Directive. For this reason, where a harmonised standard is available for a particular type of equipment, we have provided details of this standard as part of our proposals.

Interface requirements

- 2.19 Interface requirements (IRs) for radio equipment provide a link between the requirements of the R&TTE Directive and the use of national radio spectrum. The UK interface requirements describe the minimum technical specifications, such as power limits, frequency bands and channel spacing, which is necessary to avoid interference between radiocommunication services. Radio equipment must meet the UK interface requirements before it can be licensed or exempted from licensing. Current UK interface requirements are published by Ofcom at: http://www.ofcom.org.uk/radiocomms/ifi/tech/interface_req/ and describe the minimum permissible equipment requirements for the use of particular equipment in designated spectrum bands. There is a separate IRs for each different area of spectrum use.

- 2.20 The exemption Regulations generally cross refer to the appropriate IR when describing the type of equipment to be exempt from licensing and the technical conditions under which the exemption applies. Consequently, this document refers to the implementation of proposals for updating the exemption Regulations through both the amendment of the Regulations and the updating of the appropriate IRs where these are cross referenced in the Regulations.

Role of the European Commission and CEPT

- 2.21 This document refers to measures being proposed in order to implement into UK legislation, European Community (EC) Decisions or Directives, or areas where Ofcom seeks to align on a voluntary basis with the findings of work carried out by the European Conference of Postal and Telecommunications Administrations (CEPT).
- 2.22 The EC Decisions or Directives are prepared by the European Commission. The Commission's activities are based on co-ordinating and supporting the radio spectrum needs of EU policies and initiatives in sectors such as communications, transport, research and development, environment and broadcasting. EU radio spectrum policy is conducted in dialogue with Member States, European Parliament and spectrum users constituencies, so as to drive forward a co-ordinated modernisation of the radio spectrum in the EU and to contribute to horizontal policy objectives such as the internal market and competition policy. Implementation measures necessary to achieve these goals, usually in the area of spectrum harmonisation, are normally prepared in collaboration with CEPT and adopted by the Commission with the assistance of the [Radio Spectrum Committee \(RSC\)](#) which is a committee of Member States chaired by the Commission. This document contains proposals to implement a number of EC Decisions; such measures are binding on member states
- 2.23 CEPT is the European regional organisation dealing with postal and telecommunications issues and presently has members from 47 Countries. The basic aims of CEPT are to strengthen the relations between Members, promote their cooperation and contribute to the creation of a dynamic market in the field of European posts and electronic communications. It is made up of representatives of the Postal and Telecommunications Administrations of European countries including Ofcom for UK radio matters. In addition to its role advising the Commission on radio spectrum matters, CEPT produces a range of other outputs that inform the development of spectrum management across CEPT member countries, and in this consultation we identify a number of CEPT proposals designed to harmonise spectrum use which we propose to implement in the UK.

Responding to this consultation

- 2.24 Ofcom invites comments on the proposals discussed in this document by 22 September 2006. Please see Annexes 5-7 for guidance on how to respond and for information concerning Ofcom's consultation principles.

Next Steps

- 2.25 Following the closure of this consultation and having considered responses, Ofcom will issue a statement including the draft exemption Regulations which should, allowing for issues raised in response to this consultation, implement the proposals outlined in this document. It is a statutory requirement that Ofcom consult for one month on the draft exemption Regulations and at the end of this period Ofcom will seek to bring the Regulations into force. It is our current expectation that the new Regulations will be in force by December 2006.

Section 3

Citizens' Band Radio and Community Audio Distribution Systems

Background

Citizens' band radio

- 3.1 Citizens' Band (CB) Radio is primarily intended as a short range radio service generally for hobby use. Currently CB radio users must obtain an individual WTA Licence. The licences are renewable annually and cost £15 but are free of charge to CB users aged under 21 years or over 75 years of age.
- 3.2 CB radio frequency bands are shared by all CB users, and the available bands are also shared with other radio services. Ofcom does not specify which channel can be used by a particular user or exactly where they can operate. As long as the applicant is entitled to a licence and has paid the necessary fee a licence will be granted and users are free to operate anywhere in the UK within the available spectrum. Ofcom will not intervene if a CB radio licensee experiences interference from other authorised radio users; experience has shown, however, that users are generally able to avoid interference from other users by choosing an alternative channel from the many available.
- 3.3 In March 2003 The Radiocommunications Agency, the responsible regulator, issued a consultation document (now closed) which set out initial proposals to reform the licensing process in Citizens' Band (CB) radio in order to remove unnecessary administrative and financial burdens on licensees. The consultation document is available at: <http://www.ofcom.org.uk/static/archive/ra/rahome.htm> and responses to it were generally supportive of proposals to deregulate CB radio.
- 3.4 Ofcom is committed to reducing the regulatory burden on its customers and continues to monitor radio services and investigate areas where exemption could be an option. It is felt that CB radio poses a low level risk of interference to other users of the radio spectrum and would be more appropriately authorised by exemption rather than individual licences.

Proposal detail

- 3.5 Ofcom proposes to exempt from licensing the use of radio devices in the channels illustrated in *Figure 1: Table of CB Channel Arrangements* and in accordance with Interface Requirement (IR) 2027. Compliance with the relevant IR is a condition of the exemption Regulations.
- 3.6 Equipment power is limited to;
 - A maximum of 4 Watts transmitter RF carrier output in the case of equipment with a non-integral antenna;
 - A maximum of 4 Watts output for both the transmitter carrier power and the effective radiated power in the case of equipment with an integral antenna.

- 3.7 Power amplifiers (“Burners”/“Boosters” etc.) will continue to be prohibited.
- 3.8 It should be noted that CB radio shares spectrum with other services thus it does not enjoy primary, status in the band and is not a “protected” service. As a non-protected service, CB users must tolerate interference from other authorised radio users and Ofcom will not intervene to resolve such interference should it occur. The current status of the band will be unaffected by the proposed licence exemption.
- 3.9 Were CB to be de-regulated, the current CB Radio Licence terms, provisions and limitations would no longer apply and would be replaced by the terms and conditions of the proposed exemption. Ofcom also proposes to remove some current technical restrictions on use which we now believe unnecessary; these are:
- the specific prohibition of Node or repeater operation and
 - the need to limit data transmissions to particular channels.

Figure 1: Table of CB Channel Arrangements

Channel	UK Frequencies (MHz)	CEPT/EU Frequencies (MHz)	Channel	UK Frequencies (MHz)	CEPT/EU Frequencies (MHz)
1	27.60125	26.965	21	27.80125	27.215
2	27.61125	26.975	22	27.81125	27.225
3	27.62125	26.985	23	27.82125	27.255
4	27.63125	27.005	24	27.83125	27.235
5	27.64125	27.015	25	27.84125	27.245
6	27.65125	27.025	26	27.85125	27.265
7	27.66125	27.035	27	27.86125	27.275
8	27.67125	27.055	28	27.87125	27.285
9	27.68125	27.065	29	27.88125	27.295
10	27.69125	27.075	30	27.89125	27.305
11	27.70125	27.085	31	27.90125	27.315
12	27.71125	27.105	32	27.91125	27.325
13	27.72125	27.115	33	27.92125	27.335
14	27.73125	27.125	34	27.93125	27.345
15	27.74125	27.135	35	27.94125	27.355

Channel	UK Frequencies (MHz)	CEPT/EU Frequencies (MHz)	Channel	UK Frequencies (MHz)	CEPT/EU Frequencies (MHz)
16	27.75125	27.155	36	27.95125	27.365
17	27.76125	27.165	37	27.96125	27.375
18	27.77125	27.175	38	27.97125	27.385
19	27.78125	27.185	39	27.98125	27.395
20	27.79125	27.205	40	27.99125	27.405

Impact

- 3.10 In the event of CB being exempted from WT Act licensing, there would no longer be a register of users nor callsigns for CB data services and users would be free to devise call signs as appropriate in a similar way to current speech operation. Ofcom commenced issuing callsigns for CB users in April 1999, primarily to facilitate operation of data on certain channels in accordance with IR 2027. However, operation of data on CB has not proven popular and we do not believe this change will impact on the effective use of these frequencies.
- 3.11 As explained above, licence exemption in the UK is not expected to cause interference to other legitimate users of the radio spectrum. It is also not expected to alter arrangements for reciprocal operation of CB in other CEPT administrations. It would be possible to refer to the exemption Regulations (when they have entered into force) as proof of authorisation of use from the relevant UK authority (Ofcom). It is however, ultimately the responsibility of the individual to ensure that relevant regulatory requirements and terms of operation are met prior to using CB when visiting other administrations.
- 3.12 Equipment certified or type approved and first put into service prior to 8 April 2000 which complies with specifications MPT 1320, MPT 1333, MPT 1382 or ETS 300 135, marked in accordance with the appropriate specification will be covered by the proposed exemption. Equipment put into use after that date must comply with the R&TTE Directive and with the technical requirements detailed in IR 2027.

Benefits

- 3.13 Ofcom does not currently perform any detailed technical checks prior to issuing a CB licence. As long as the applicant is entitled to a licence and has paid the necessary fee a licence will be granted. Through exemption CB enthusiasts may continue to enjoy the use of their radio equipment but without the need to apply and pay for a licence document. This represents a significant lessening of the regulatory burden for 20 thousand spectrum users.
- 3.14 Ofcom is committed to performing its duties as efficiently as possible. We do not believe licensing now represents a necessary regulatory requirement for the use of CB and the removal of this requirement will reduce the cost of administering CB radio spectrum enabling Ofcom to provide a more efficient service.

Implementation

- 3.15 Implementation of CB licence exemption would be achieved by adding appropriate reference to it to the proposed amendments to the existing exemption Regulations and to clarify the Interface Requirement by adding a clause in the Informative Annex to indicate that the CB service is subject to interference and afforded no protection. Other amendments in the IR facilitating the relaxation of restrictions as described in 3.10 may also be implemented subject to responses to the consultation
- 3.16 The current technical and operating conditions described above and in IR2027 will continue to apply and be enforced following licence exemption.

Community audio distribution systems (CADS)

- 3.17 In 2004 Ofcom responded to demand, mainly from religious communities, for what it termed Community Audio Distribution Systems (CADS). In practice these are simple, short-range and inexpensive wireless public address systems transmitting local religious community services to housebound congregation members (although evidence for demand primarily arose here, other community groups could also use the arrangements for other similar purposes). Ofcom proposed to license such organizations to operate within the UK CB allocation under the same technical operating parameters as those applied to CB use.
- 3.18 It was proposed to allow CADS users to share spectrum with the Citizens' Band radio service in a way which would provide the flexibility required to transmit religious and community service material whilst protecting other spectrum users from harmful interference. Ofcom consulted on these proposals in August 2004. The consultation document (now closed) is available at:
<http://www.ofcom.org.uk/consult/condocs/cads/cads/?a=87101>.
- 3.19 Following a broadly positive response to the proposals, Ofcom announced CADS would be trialled in the UK CB band in Northern Ireland and West Yorkshire over a twelve month period. The results of these trials indicated that the use of CB radio for CADS could co-exist with traditional CB use. Since the technical requirements applicable to CB and CADS use are the same, the authorisation of the use of radio equipment for CADS is subject to the same proposals as standard CB radio i.e. exemption from the need to hold a WT Act Licence.
- 3.20 It should be noted however, that following a detailed review of CADS Ofcom has concluded that under legislation relating to Broadcasting, CADS services fall within the category of sound broadcasting services as defined in section 126(1) of the Broadcasting Act 1990 (as amended), on the basis that they involve the provision of a service consisting of the one-way transmission of sound intended for reception by members of the public. Consequently should CADS services become widely available (i.e. beyond the scope of Ofcom trials), such authorisation in the long term must be licensed under the Broadcasting Act 1990 unless they are also made exempt from this requirement. The proposal for this may be found in the recent separate consultation exercise (now closed) the details of which may be found at http://www.ofcom.org.uk/consult/condocs/cads_scheme

Question 1) Do you agree with Ofcom's proposal to exempt users of Citizen's Band (CB) radio (and other related applications such as Community Audio Distribution) from the need to possess a Wireless Telegraphy Licence

Section 4

“Micro”FM Transmitters

Background

- 4.1 “Micro” FM transmitters are designed to facilitate easy connection between audio sources (such as digital audio devices and MP3 players) and normal FM broadcast receivers by way of a radio link. They operate by transmitting a very low power radio signal in the sound broadcasting band (87.5-108 MHz) which a domestic radio receiver is able receive in much the same way as it does signals from normal broadcast transmitters. This link would enable a user, for example, to play music stored on a MP3 player through their radio.
- 4.2 The devices exploit the fact that not all the available radio spectrum for analogue sound broadcasting can be used in any one location. Broadcast radio transmitters generally cover a fairly large, but still limited, area. It is not possible to use the same frequency in adjacent areas as the signal from the two transmitters would interfere with each other. Instead broadcast networks are carefully planned to re-use frequencies only at a safe distance from other transmitters on the same frequency (this is why you must re-tune your car radio when you drive outside the coverage area of a particular transmitter). Consequently in certain areas it is necessary to leave a particular frequency “unused”. Micro power FM transmitters operate in this unused spectrum to create a very short range radio link from an audio device to a domestic radio receiver.
- 4.3 However, because these devices operate in the sound broadcast band, and because in the UK this band is extremely heavily used and with frequencies very close to each other, such devices do have the potential to cause interference to domestic radio reception unless carefully designed. It is for this reason that it has been illegal to use these devices in the UK and most of Europe.
- 4.4 Nonetheless it is clear that there is considerable consumer demand for such devices and that they do offer a number of potential benefits. Consequently Ofcom has been working in conjunction with other regulators across Europe to develop a set of characteristics for these devices that would enable them to operate effectively whilst minimising the risk of interference to domestic radio reception.

Proposal details

European Developments

- 4.5 Responding to this growing demand for micro FM transmitters Ofcom initiated work in the European Conference of Communications and Postal Administrations (“CEPT”) to develop a harmonised approach to the use of this equipment. A series of technical studies were carried out to ascertain what constraints should be placed on these transmitters to ensure the risk of interference to broadcast reception was minimised while still enabling this technology to work effectively.
- 4.6 The studies recommended a number of equipment characteristics which are designed to minimise the risk of interference. These included:

- Limiting power to 50 nW which will provide a range of a few metres adequate to enable most domestic and in-car applications;
 - Limiting the power the equipment can transmit into neighbouring frequency channels (referred to as “adjacent band “ power)
 - Ensuring that the equipment is flexible enough to enable users to select the unused frequencies;
 - Requiring that the device stops transmitting when not in use.
- 4.7 As a result of this work , the existing CEPT recommendation on Short Range Devices (CEPT/ERC/Rec 70-03 entitled Relating to the use of Short Range Devices SRD (“Recommendation 70-03”) has been amended to include this allocation (Annex 13d) and the European Telecommunications Standards Institute (ETSI) have developed a technical standard for the equipment (EN 301 357).
- 4.8 Now that the work has been completed and the standard adopted, Ofcom believe that the solution developed by CEPT will enable the successful use of micro FM transmitter technology for a range of applications whilst minimising the risk of interference. We also believe that the adoption of a European solution ensures that a substantial market is available to equipment manufacturers in order to drive competition and economies of scale.
- 4.9 We propose to exempt from licensing, micro FM transmitters operating in the band 87.5-108 MHz with a maximum power of 50nW effective radiated power (erp). As with all licence-exempt equipment, micro FM transmitters must be compliant with the R&TTE Directive. Compliance with the standard EN 301 357 is not mandatory but provides a presumption of conformity with the Directive.

Impact

- 4.10 As with all licence-exempt equipment there is a slight risk of interference to other users of the spectrum. Ofcom believes, however, that authorisation of use subject to the technical restrictions identified will provide adequate mitigation of these risks.

Benefits

- 4.11 Authorising the use of micro FM transmitters in the UK will provide a previously unavailable legitimate market for new equipment to the benefit of UK consumers. Achieving this authorisation through licence-exemption is in line with Ofcom’s approach to other short range devices where interference is deemed unlikely. It is also the most practical solution since the other option of individual licensing of each transmitter would be over burdensome to the consumer as well as resource intensive for Ofcom.

Implementation

- 4.12 The exemption Regulations will be updated to reflect an entry for micro FM transmitters. The associated Interface Requirement IR 2030, will also be updated to require conformity with the technical characteristics outlined in Recommendation 70-03 Annex 13d and described above. A draft copy of IR 2030 can be found at Annex 3.

Question 2) Do you agree with Ofcom's proposals to permit the use of "Micro" FM transmitters in the UK, and to authorise that use by licence exemption.

Section 5

Satellite Terminals

High Density Fixed Satellite Services (HDFSS) at 28 GHz

Background

- 5.1 High Density Fixed Satellite Services (HDFSS) is a satellite technology designed to provide broadband internet and multi media access to users not served by conventional terrestrial networks. It uses small earth stations and antennas (normally < 1m), allowing the flexible, rapid and ubiquitous deployment of networks. The potential application of HDFSS in rural areas of the UK should enhance the ability to deliver broadband, interactive digital television and High Definition Television to those areas not served by terrestrial delivery.
- 5.2 The ITU World Radio Conference 2003 identified a number of suitable bands for HDFSS including spectrum at 28GHz¹. Taking forward this recommendation, CEPT ECC decision, ECC/DEC(05)01² designates the bands 27.5-27.8285 GHz, 28.4445-28.9485 GHz and 29.4525-29.5 GHz for the use of uncoordinated FSS Earth stations (HDFSS) and sets the parameters to ensure that there is no interference to Fixed Services in adjacent bands.
- 5.3 Ofcom has previously published its intention to award parts of the 28 GHz band, including some spectrum identified in the ECC decision for HDFSS, to terrestrial services in the most flexible manner possible in its Spectrum Framework Review Implementation Plan³. In addition, some of the identified spectrum is already in use in the UK by other services. Consequently Ofcom does not intend to make available the entirety of the band identified in the ECC Decision, but will make available the bands 27.5 – 27.8285 GHz and 28.4445 – 28.8365 GHz, which represents a large proportion of the identified band.
- 5.4 The fact that these bands have been identified for uncoordinated use by the ITU and CEPT does not imply that they cannot be used for more conventional earth station applications. These more conventional uses, such as a “hub terminal” or “TV broadcast feeder link” can be licensed individually under existing arrangements.

Proposal details

- 5.5 Ofcom proposes to exempt, from licensing, the establishment, installation and use of HDFSS equipment in the 27.5–27.8285 GHz and 28.4445-28.8365 GHz bands,
- 5.6 Licence exemption is proposed as the appropriate method of authorisation on the basis that HDFSS equipment used in the identified bands is unlikely to cause interference to other users of the radio spectrum when operating in accordance with specified technical parameters.

¹ Radio Regulations RR 5.516B and resolution (Res.143) regarding implementation of the systems

² ECC Decision of 18 March 2005 on the use of the band 27.5-29.5 GHz by the Fixed Service and uncoordinated Earth stations of the Fixed-Satellite Service (Earth-to-space)

³ See <http://www.ofcom.org.uk/consult/condocs/sfrip/>

- 5.7 ECC/DEC (06)03⁴ and ECC/DEC(05)01 identify a number of technical parameters necessary to ensure the efficient use of the available spectrum and to avoid interference to other spectrum users and electronic equipment on board aircraft (when satellite terminals are deployed adjacent to airfields). These were arrived at after a detailed sharing analysis of the possible impact of satellite terminal transmissions. Ofcom proposes to ensure compliance with the ECC Decision and to protect adjacent fixed services in the following way:
- For HDFSS uncoordinated use of the bands, the total transmitted effective isotropic radiated power (e.i.r.p.) from a satellite terminal shall not exceed 50dBW;
 - In the bands 27.500-27.8285GHz and 28.4445-28.8365 GHz the elevation angle of the HDFSS terminal shall be higher than 10°;
 - In the bands 27.500-27.8285GHz and 28.4445-28.8365GHz, HDFSS (uncoordinated earth stations) shall not have their occupied band edges closer than 10 MHz from the edges of the bands and any spurious emissions in the 10 MHz band edge shall be attenuated by: **43 + 10 Log₁₀ (P)dB** or **60dBc**, whichever is less stringent, where **P (W)** is the total mean power supplied to the antenna transmission line;
 - To protect services in adjacent bands the off axis e.i.r.p. density in the bands 27.8285 -28.4445 GHz and 28.8365 – 29.0605 GHz shall be limited to -35 dBW/MHz, (off axis refers to angles greater than 7° from the axis of the main beam of transmission);

Impact

- 5.8 Both of the bands are currently used by coordinated Satellite Earth Stations operating at higher radiated powers which will still be subject to site clearance and the requirement to have a Permanent Earth Station licence. Because both types of terminal use frequencies which are assigned and coordinated by the space station operators, no interference occurs between the co-located, co-frequency earth stations. As such the use by coordinated earth stations can continue and will not be affected by the introduction of licence exemption for HDFSS uncoordinated earth stations.
- 5.9 Ofcom has considered the opportunity cost involved in making this spectrum band available for HDFSS on a licence-exempt basis and has concluded that this is very low.
- 5.10 Whilst the initial application in the band is focussed on HDFSS, this will not prevent future use of the band by other fixed / mobile applications that can operate on a detect before transmit (cognitive) basis in order to avoid interference from HDFSS terminals. Such systems are likely to complement the current terrestrial applications in adjacent bands.

⁴ ECC Decision of 24 March 2006 on Exemption from Individual Licensing of high e.i.r.p satellite terminals (HEST) operating within the frequency bands 10.70-12.75 GHz or 19.70-20.20 GHz space-to-Earth and 14.00-14.25 GHz or 29.50-30.00GHz Earth-to-space.

Benefits

- 5.11 These changes will facilitate the flexible, rapid and ubiquitous deployment of small FSS earth stations providing broadband internet and multi media access to users not served by conventional terrestrial networks. This aligns with both UK Regional and EU Development objectives, benefiting consumers in rural areas of the UK, enhancing the ability to deliver broadband, interactive digital television and HDTV to those areas not served by terrestrial delivery.

Implementation

- 5.12 HDFSS will be added to the exemption Regulations and the associated IR (2016) updated.

Question 3) Do you agree with Ofcom's proposals to exempt users of High Density Fixed Satellite Services (HDFSS) terminals from the need to possess a Wireless Telegraphy Licence.

Inmarsat terminals

Background

- 5.13 It is proposed to exempt the new Inmarsat, Land Mobile Satellite Service Global Access Network (GAN) terminals. These are new products developed to provide Broadband Global Access Network (BGAN) or Regional Broadband Global Access Network (R BGAN). The products use the same frequency spectrum as other Inmarsat terminals and are within the current technical parameters of existing licence-exempt Inmarsat terminals. These terminals operate within the globally allocated mobile satellite bands and the bands used for Satellite Personal Communications Systems (S PCS) defined within the free circulation and licence exemption ECC decisions (02)08⁵ and (02)11⁶.

Proposal details

- 5.14 The terminals are now fully developed and available for worldwide use; including them in the exemption amendment exercise is a timely mechanism for aligning the new products with the exemption status already afforded to other Inmarsat terminals. The details of the terminals are outlined below in *Figure 2: Inmarsat Terminals*.

⁵ ECC Decision of 15 November 2002 on free circulation and use of Satellite User Terminals operating within the frequency bands 1525-1559 MHz space-to-Earth and 1626.5-1660.5 MHz Earth-to-space, in CEPT countries, enlarging the field of application of ERC/DEC(95)01.

⁶ ECC Decision of 15 November 2002 on exemption from individual licensing of Satellite User Terminals operating within the frequency bands 1525-1559 MHz space-to-Earth and 1626.5-1660.5 MHz Earth-to-space, for land mobile applications.

Figure 2: Inmarsat Terminals

Type of Inmarsat station	Maximum power (eirp)	Relevant ETSI standard
GAN	+ 25 dBW (+2/-2dB)	EN 301 444 v1.1.1
R BGAN (data only)	12 dBW	EN 301 681 v1.3.2 Satellite earth stations and systems (SES); Harmonized EN for mobile earth stations (MES) of geostationary mobile satellite systems, including handheld earth stations, for satellite personal communications networks (SPCN) in the 1.5/1.6 GHz bands under the mobile satellite service (MSS) covering essential requirements under Article 3(2) of the R&TTE Directive.
BGAN 9201 Briefcase	21 dBW	EN 301 681 v1.3.2
BGAN Explorer 500 Notebook	16 dBW	EN 301 681 v1.3.2
BGAN WorldPro 1000 Pocket	11 dBW	EN 301 681 v1.3.2

Impact

- 5.15 There is no impact to current users of the radio spectrum as the terminals can only be used within the Inmarsat network and the co-coordinated frequencies which are currently available to that network.

Benefits

- 5.16 This will enable the evolution of technology and services under the existing satellite network user exemption.

Implementation

- 5.17 Ofcom will add the terminal details to the current network user exemption contained in the exemption Regulations and update the associated Interface Requirement 2016.

Question 4) Do you agree with Ofcom's proposals to exempt users of Inmarsat GAN terminals from the need to possess a Wireless telegraphy Licence.

Section 6

Short Range Radar and Movement Detection Systems

Background

- 6.1 Short Range Radar (SRR) and Movement Detection Systems (MDS) operate across a range of spectrum bands for such applications as vehicle radar (collision avoidance and safety), burglar alarms, speed monitoring, weather and terrain radar. Ofcom proposes to make new spectrum available to this application in both the 24 GHz and 2.4 GHz bands.

24 GHz

- 6.2 For many years the frequency band 24.05-24.25 GHz has been available across Europe for SRR and MDS applications. However, in the UK it has not been possible to make all of this band available because Government users occupy a portion of the band (24.05-24.15 GHz), and the consequent risk of interference issues arising.
- 6.3 Recently there have been two developments relating this band. Firstly, the European Commission (EC) issued Decision 2005/50/EC⁷ making it available for the time limited use of wide-band automotive radars. The second development has been the emergence of narrow-band automotive radars which are not subject to the limitations imposed on the wide-band variant and in which stakeholders have registered an interest. To develop systems which could operate on a pan European basis they would need access across the full band.
- 6.4 Ofcom gave a commitment to investigate the possibility of removing national restrictions and has subsequently explored this possibility with the Government Department concerned. As part of this process a series of tests were carried out to ascertain under what circumstances it would be possible to permit access to this portion of the band in the UK. Ofcom is pleased to report that we have agreed a set of technical characteristics which, if met, would permit use of this part of the band.

Question 5) Do you agree with Ofcom's proposals to make available the frequency 24.05-24.25 GHz for use by short range radar (including automotive applications) devices on a licence-exempt basis.

2.4 GHz Band

- 6.5 In response to stakeholder requests Ofcom has also explored with other European administrations the possibility that MDS technology could be permitted to operate in the band 2.4GHz-2.4835GHz. This band is used by a range of different licence-exempt applications and technical studies carried out within CEPT have concluded that allowing MDS systems to operate in this band, with certain technical restrictions, would not significantly increase the risk of interference to other users of this spectrum.

⁷ Commission Decision of 17 January 2005 on the harmonisation of the 24GHz range radio spectrum band for the time limited use by automotive short-range radar equipment in the Community.

Proposal details

- 6.6 It is proposed to make the band 24.05-24.25 available for SRR (including automotive applications) with a maximum power limit of 100mW, and subject to a minimum sweep rate of 2MHz/ms. These technical restrictions have been included as part of the agreement for enabling access to this spectrum.
- 6.7 For MDS we propose to permit the use of the band 2.4GHz-2.4385GHz by movement detection alert applications at a maximum power of 25mW.

Impact

- 6.8 Provided the prescribed technical constraints are met studies have shown that the risk of interference to other spectrum users is low.

Benefits

- 6.9 Allowing access to the band for automotive SRR and MDS fulfills the requirements of stakeholders and aligns with the provisions implemented across Europe. This in turn enables such stakeholders to develop equipment for use in the UK market.

Implementation

- 6.10 The exemption will be achieved through updating the Short Range Devices Interface Requirement (IR 2030) to reflect the technical parameters discussed in this chapter. IR 2030 will be referenced by the updated exemption Regulations.

Question 6) Do you with Ofcom's proposals to make available the band 2.4 GHz-2.4385 GHz for movement detection systems.

Section 7

Radar Level Gauges

Background

- 7.1 Radar Level Gauges (RLGs) tend to be used in heavy industrial processes, although there is no restriction of their use to any particular industry or sector. Typical uses are to accurately control the fluid height in storage tanks or to regulate fluid flow in an industrial process. Generally RLGs pose a very low threat of interference as they operate in sealed environments which provide large amounts of radio attenuation or “shielding” and do not radiate significantly beyond the building in which they are being used.
- 7.2 Currently users are required to apply for a WT Act licence and Ofcom issues lifetime licences free of charge. There are approximately 420 of these lifetime licences in force with between 10 and 20 new licences generally issued each year.

Proposal details

- 7.3 Ofcom proposes to exempt RLGs in accordance with the parameters set out below in *Figure 3: RLG Bands*. This will mean that in the majority of cases the use of RLGs will no longer require a licence.

Figure 3:RLG Bands

Frequency of intentional transmission	Power
5150 MHz to 7100 MHz	25 mW Peak, 0.1 mW average
8500 MHz to 10.6 GHz	25 mW Peak, 0.1 mW average
10.7 GHz to 10.850 GHz	25 mW Peak, 0.1 mW average
24.3 to 27.7 GHz	100 mW peak, 0.36 mW average

- 7.4 The use of RLGs in the band 10.6 GHz to 10.7 GHz will continue to be permitted but will still require a licence issued on a lifetime basis free of charge by Ofcom. This will enable Ofcom to properly manage the interference risk, albeit low, to radio astronomy and earth exploration satellite users also in the band.
- 7.5 Ofcom believes that, with the exception of the small part of the band where licensing will continue, there is no longer a need to maintain a licensing regime for RLGs. This exercise in amending the 2003 Regulations provides a timely opportunity for the exemption of RLGs given the low risk of interference.

Impact

- 7.6 Although licences are currently issued free of charge Ofcom recognises the regulatory burden placed on stakeholders. Exemption would remove the requirement to register each site through the application for a licence. Given the link between the

use of this technology and specialist industrial processes, it is unlikely that there will be any significant change in patterns of use within the UK.

Benefits

- 7.7 There will be a benefit both to users and Ofcom in the removal of the administrative task of applying for and issuing a licence.

Implementation

- 7.8 IR 2030 will be updated to include Radar Level Gauges as described in this document.

Question 7) Do you with Ofcom's proposals to remove the need for users of most radar level gauge equipment to possess a Wireless Telegraphy Licence.

Section 8

Digital PMR 446

Background

- 8.1 PMR 446 is the name given to “Walkie Talkies” operating in frequencies around 446 MHz. These devices provide short range voice only communication offering a basic, but very effective radio service for both the business and non business user. The radios do not need a licence and there are no call charges to pay. They can be used by anyone of any age and use is harmonised across the European Community. The technology has proved extremely popular with a range of different types of radio users.
- 8.2 Current PMR 446 equipment uses analogue technology. Ofcom has been working in conjunction with colleagues in Europe to explore if additional spectrum could be identified to support a digital version of this service. Digital technology offers a number of potential advantages over analogue by providing better quality communication and enhanced functionality.
- 8.3 This work has led the Electronic Communications Committee (ECC) to designate the frequency band 446.1 to 446.2MHz for licence-exempt digital PMR 446 applications. The resulting Decision⁸ effectively mirrors harmonisation arrangements in place for analogue PMR 446, and will hopefully lead to a similar success for the digital variant of this technology.
- 8.4 Noting the success of the analogue PMR 466 and the potential benefits of its digital cousin, Ofcom proposes to make spectrum available for digital PMR 446 devices in the frequency range 446.1 – 446.2MHz on a licence-exempt basis.

Proposal

- 8.5 Ofcom propose to exempt the use of Digital PMR 446 equipment in line with the ECC Decision in this area. Arrangements will be similar to those already in place for analogue PMR446. Studies supporting the development of the ECC Decision identified a number of technical constraints on the equipment which would minimise the risk of interference to other users of the band and make best use of the available spectrum. These were reflected in the ECC Decision and Ofcom propose to implement these constraints in its exemption Regulations.
- 8.6 Accordingly Ofcom propose to exempt from licensing digital PMR 446 devices with the following parameters shown in *Figure 4 : D-PMR 446 parameters*:

⁸ ECC Decision (05)12 “ECC Decision of 28 October 2005 on harmonised frequencies, technical characteristics, exemption from individual licensing and free carriage and use of digital PMR 446 applications operating in the frequency band 446.1 – 446.2MHz.”

Figure 4 : D-PMR 446 parameters

Maximum e.r.p.	Channel spacing ⁹	Maximum transmitter time-out time	Radio equipment	Antenna
500 mW	6.25 kHz or 12.5 kHz	180 seconds	Hand portable only	Integral antenna only

8.7 As with other new exemptions the equipment must comply with the R&TTE Directive. ETSI has produced two European harmonised standards for PMR 446 - EN 300 113-2 (12.5 kHz bandwidth) and EN 301 166-2 (6.25 kHz bandwidth).

Benefits.

8.8 Digital PMR 446 is a European wide harmonised application, foreseen as a digital application to complement the success of its analogue equivalent, which has been a market success throughout the UK and Europe.

8.9 The introduction of digital PMR 446 use in the UK promotes the production and use of licence-exempt, digital, spectrally efficient radiocommunications equipment. It is also seen as an opportunity to further the interests of citizen-consumers through the encouragement of competition in the licence-exempt and digital equipment markets.

Impact

8.10 Ofcom announced some time ago its intention to make the 446 MHz band available to digital PMR446 and consequently closed the band to new applications for other services in August 2004. Existing users will however continue to operate in the band if they wish and hence share the band with digital PMR 446 use.

8.11 The experience of analogue PMR 446 demonstrates that the risk of interference is low (there have been no reported interference issues), however Ofcom recognises that there are licensed users within this frequency range and in the unlikely event that any interference issues arise Ofcom will investigate the source of these case by case. However if any existing licensees wish to have an alternative assignment outside of the 446.1 to 446.2 MHz frequency range an alternative assignment will be offered.

8.12 Users of digital PMR 446 will not be afforded protection from interference which may be caused in areas where there are existing licensed systems.

Implementation

8.13 A reference will be added to the Exemption Regulations to incorporate digital PMR446 as it only refers to the analogue equivalent and update the associated IR 2044.

Question 8) Do you agree with Ofcom's proposals to exempt users Digital PMR 446 from the need to possess a Wireless telegraphy Licence.

⁹ The centre frequency of the first channel is at a distance of channel spacing /2 from the lower band edge.

Section 9

EC Decision on Short Range Devices and Related Changes

Background

What are Short Range Devices ?

- 9.1 Short Range Devices (SRDs) is a generic term for devices that transmit at low powers and consequently operate over quite short ranges. They operate in a wide range of frequencies band and are used for a wide range of applications.

EC Decision on Short Range Devices

- 9.2 At the time of publishing this consultation, it is our expectation that the European Commission (EC) will issue a Decision entitled “EC Decision establishing a framework for the harmonization of radio spectrum for use by short-range devices in the Community”. The Decision will require member states to permit the use of equipment meeting the requirements of, and operating in the frequency bands specified in that Decision. A copy of the draft Decision can be found at Annex 4
- 9.3 The frequency bands and equipment which the Decision identifies are primarily those which already benefit from voluntary harmonization across Europe through CEPT. In the most part they reflect existing arrangements within the UK.
- 9.4 The Decision will require member states to make available the identified frequency bands in a non-exclusive, non-interference and non-protected basis for the types of devices and subject to the specific conditions as set out in the Annex to the Decision.
- 9.5 In the UK, Ofcom is the relevant authority that has the power to implement the measures, provided for in the Decision and has an obligation to transpose it into national law. As the equipment covered by the Decision operates at low powers on a non-interference, non-protected basis and covers devices which are produced for the mass market, Ofcom believes that licensing such devices is generally impractical. The devices identified in the Decision are therefore appropriate candidates for licence exemption. Having examined the existing arrangements for licence exemption in the UK, Ofcom believes that the existing Regulations deal with short range devices in a way that is already largely compliant with the Decision. There are however, a number of minor changes that we will need to make to bring the UK fully in line with the Decision.

Proposal details

- 9.6 The changes are as follows:
- The removal of the current distinction made in UK Regulations between “general short range devices” and “general telemetry and telecommand” and their substitution with a single, all embracing, category entitled “non-specific short range devices”. The change provides increased flexibility, and greater clarity, as to the range of devices permitted to operate in these frequency bands;

- Permitting voice communication for non-specific SRD devices in the band 869.7 – 870 MHz provided they use listen-before-talk technology;
- The removal of the channel bandwidth limitation for non-specific short range devices operating in the bands 868 – 868.6 MHz, 868.7 – 869.2 MHz, 869.4 – 869.65 MHz, 869.7 – 870 MHz and 2400-2483.5 MHz;
- The removal of the channel bandwidth limitation for Alarm devices operating in the bands 868.6 – 868.7 MHz. Also, for these devices, clarification that consecutive channels may be combined where a larger bandwidth is required, due to the modulation of the signal, up to the maximum sub-band frequency allocation. The total signal bandwidth, including frequency error and drift, must be contained within the allocated sub-band under all conditions. This measure both meets the requirement of the EC decision and provides additional flexibilities to users in the UK;
- The removal of the Audio and Music restrictions in the Inductive Applications allocation for frequency bands below 135 kHz;
- The removal of the channel bandwidth limitation for Wireless Audio devices operating in the bands 863 – 865 MHz.

9.7 It is Ofcom's expectation that the above changes will fully implement the SRD Decision as currently drafted (and included at Annex 4). We do not expect the SRD Decision to change before it is finalised, however, should this happen Ofcom will amend the proposals as appropriate in order to implement the Decision and publish further notification of these changes.

9.8 The Decision stresses the need to review the bands and devices it covers on a regular basis to take account of the evolution of technologies in the market situation. Consequently a review of the Annex to the Decision will be carried out by the Commission at least once every year and Ofcom would implement any changes which may arise following further appropriate consultation.

Related harmonisation measures

9.9 As previously discussed, the existing exemption Regulations are generally consistent both with the draft SRD Decision and with a range of harmonization measures taken voluntarily by Ofcom to align with other CEPT countries. These are reflected in CEPT Recommendation 70-03 which details all the spectrum identified for Short Range Devices (SRDs) within Europe (and formed the basis for the SRD Decision). It is a "living" document and is regularly updated to reflect the changing needs of the industry and changes in spectrum availability. The Recommendation contains a number of annexes identifying spectrum that has been designated for certain types of SRD. It also contains an appendix in which administrations can list those parts of the Recommendation which have not been implemented within their countries, or where additional national restrictions apply.

9.10 It is Ofcom's approach to harmonise spectrum use only where such harmonisation can bring significant benefits such as, reduced interference, lower cost equipment through economies of scale and increased certainty for manufacturers, and where equipment commonly crosses national borders. Where Ofcom does harmonise spectrum use it does so in a manner that imposes minimum restrictions on permitted use. These benefits are particularly pertinent to SRDs and Ofcom has therefore

sought to align with Recommendation 70-03 where appropriate and where national frequency management considerations permit.

9.11 In view of the above the following minor changes are proposed to the exemption regulation which better align UK arrangements with Recommendation 70-03 where this has not been achieved in relation to the changes proposed in relation to the SRD Decision:

- The addition of new bands at 9-135 kHz and 30 to 37.5 MHz for medical and biological applications;
- Replacing the term Radio Local Area Networks with the term, widely recognised and used by CEPT and ETSI, 'wideband data transmission systems' for reasons of consistency and to aid customer understanding of the range of applications permitted by this exemption. We also propose to remove the requirement that equipment has a minimum aggregate bit rate of 250 K Bits/Sec and to permit other wide band access techniques (such as OFDM) to be used in addition to the frequency hopping and direct sequence techniques currently allowed;
- New bands for the detection of movement or alert devices in the frequency range 2400-2483.5 MHz at a maximum power of 25 mW e.i.r.p;
- Raised power for RFID apparatus **only** at 60 dB μ A/m in the inductive band at 13.553-13.567 MHz;
- Permitting the use of RFID equipment in the band 2446 to 2454 MHz at 500 mW;
- Remove the closed loop antenna / magnetic field, restriction for the Industrial, Scientific & Medical (ISM) bands of 6765 – 6795 kHz and 13.553 – 13.567 MHz;
- Remove the restriction on audio transmission for medical equipment operating in the 402 – 405 MHz band;
- Clarification that road transport and traffic telematics operating in the band 76-77 GHz can be used for both short range on-board vehicle and infrastructure radar;
- The addition of the bands 148.5 to 1600 kHz at a power of -5 dB μ A/m at 10 m, and 3.155 – 3.400 MHz at 13.5dB μ A/m @ 10 m;
- Simplification of the way frequencies available for radio frequency hearing aids in the band 173.325 to 175.075 MHz are expressed.

Impact

9.12 The impact of these minor changes is accordingly minimal since there is no increased risk of interference.

Benefits

9.13 Short-range devices are typically mass-market and/or portable products which can easily be taken and used across borders. Differences in spectrum access conditions can prevent their free movement, increase production costs and create risks of harmful interference with other radio applications and services. These proposals impose the minimum necessary restrictions on permitted uses, and extend the

principle of technology neutrality by extending the range of applications which can make use of bands available for SRDs.

Implementation

9.14 IR 2030 will be updated to reflect the changes outlined.

Question 9) Ofcom would welcome comments on its proposals to implement these changes concerning short range devices.

Section 10

EC Decision on the Band 169.4-169.8125 MHz

Background

- 10.1 In 1990 spectrum within the 169.4-169.8125 MHz band was designated within the Community, through a European Directive¹⁰, for the introduction of the “pan-European land-based public radio paging service” known as “ERMES”. This technology did not prove as successful as originally hoped and use of this band for ERMES in the Community as a whole has decreased dramatically or even ceased altogether.
- 10.2 Recognising that this spectrum was not being efficiently utilised, the Commission issued a mandate to CEPT to examine future possible uses of this spectrum. In particular, the Commission was interested in applications which could provide for the needs of specific social groups, such as the hearing impaired and persons requiring urgent assistance.
- 10.3 As mandated, the CEPT produced a new frequency plan and channel arrangement, allowing six types of preferred applications to share the radio spectrum band from 169.4 up to 169.8125 MHz in order to meet several Community policy needs. The identified applications are:
- Hearing aids: Where persons suffering from a hearing disability would benefit from a harmonised radio spectrum band in terms of improved travelling conditions between Member States and reduced equipment cost due to economies of scale;
 - Social Alarms: The development of an internal market for social alarms which allow elderly or disabled people to call for assistance;
 - Asset tracking or tracing devices: These devices would assist in tracking and recovering stolen goods across the Community;
 - Meter reading systems used by utility companies;
 - Existing paging systems such as ERMES; and
 - Private mobile radio systems when employed for temporary use.
- 10.4 The Commission have now reflected CEPT’s recommendations for the future use of this band in a Decision -“Commission Decision 2005/928/EC of 20 December 2005 on the harmonisation of the 169.4-169.8125 MHz frequency band in the Community”. The Decision effectively repeals the 1990 Directive on ERMES and mandates member states to make spectrum available in line with the CEPT plan, as reflected in

¹⁰ Council Directive 90/544/EEC of 9 October 1990 on the frequency bands designated for the coordinated introduction of pan-European land-based public radio paging in the Community (the ERMES Directive).

the Decision. As the relevant Authority in the UK, Ofcom must implement the Decision which can be found at:

http://eur-lex.europa.eu/LexUriServ/site/en/oj/2005/l_344/l_34420051227en00470051.pdf

10.5 The Decision divides the spectrum 169.4 to 169.8125 MHz into two parts;

- A low power part (169.4 to 169.6 MHz)
- A high power part (169.6125 to 168.8125 MHz)

The two parts are divided by a 12.5 kHz 'guard band'.

10.6 The proposals contained in this document deal only with implementing into UK authorisation arrangements the low power part of the spectrum covered by the Decision. The Decision requires that the high power part of the band accommodate high power transmitters for tracing and asset tracking systems, paging systems, and also the possible alternative applications of tracing, paging, temporary use and private mobile radio communications. The Decision does, however, provide for the continued use of the band by paging and private mobile radio applications not in conformity with the Decision if they were already authorised at the time the Decision was made. Ofcom is currently examining how best to utilise this spectrum in compliance with this Decision and will announce plans at some point in the future.

10.7 As regards the low power part of band, the Decision directs that the "least onerous" authorisation system should be adopted when implementing the Decision into national arrangements. As the equipment covered by the Decision operates at low powers on a non-interference, non-protected basis and covers devices which are produced for the mass market, Ofcom believes that licensing such devices is generally impractical. The devices identified in the Decision are therefore appropriate candidates for licence exemption. The following section details the basis on which equipment will be exempted in order to implement the Decision in the UK.

Proposal details

10.8 The Decision contains a detailed band plan and channelling arrangement which we intend to reflect in UK exemption arrangements. These can be found in the Decision:

http://eur-lex.europa.eu/LexUriServ/site/en/oj/2005/l_344/l_34420051227en00470051.pdf.

10.9 A summary of the frequencies available for the identified applications for the low power part of the band can be found at *Figure 5 : Proposals for Implementation of Commission Decision 2005/928/EC*.

10.10 Article 3(5) of the Decision limits the maximum permissible power in the low power part of the band to 0.5 Watts effective radiated power (e.r.p.). The article also specifies the maximum duty cycle for meter reading systems and tracing and tracking systems at <10 % and < 1% respectively. The Decision does not, however, specify the actual powers that should be permitted for each application, and other relevant technical information that would ensure that equipment can work effectively and not interfere with other users of the spectrum.

- 10.11 However, much work has been done on this subject within CEPT and CEPT Recommendation 70-03 (as recently updated¹¹) contains recommendations on appropriate parameters for social alarms and hearing aids. These parameters limit maximum power to 10 mW (erp) and specify a maximum duty cycle for social alarms of < 0.1 %. It is these parameters that Ofcom propose to use to define the characteristics of equipment that will be exempt from licensing in Ofcom's implementation of the Decision.
- 10.12 For meter reading and asset tracking applications work is still underway within CEPT to define appropriate parameters for these devices. Specifically, this work is examining if, with appropriate mitigation, higher powers could be supported for these applications. We expect this work to conclude next year and would plan to implement CEPT's recommendation into our exemption arrangements at the earliest convenient opportunity. Until this work is complete Ofcom propose an interim arrangement where power is limited to 10 mW erp in line with other applications using the band. In this way early access to this spectrum can be provided for these applications while minimizing the risk of interference to other users of the spectrum. We recognize that this limitation may restrict the utility of these bands for the moment but believe it prudent to await CEPT's recommendation here prior to allowing more liberal technical constraints.
- 10.13 For all equipment covered by the Decision a harmonized standard, EN 300 200¹² is available. Compliance with this standard will provide an assumption of conformity with the R&TTE directive.
- 10.14 *Figure 5 : Proposals for Implementation of Commission Decision 2005/928/EC* details our proposals for the appropriate technical constraints required to effectively implement the Decision. As directed by the Decision Ofcom will continue to review, and from time-to-time modify, these characteristic with the aim of ensuring the most efficient use of the available spectrum possible.

¹¹ ERC Recommendation 70-03 (17 November 2005) as amended, Annex 10 (Radio Microphones and Assistive Listening Devices) under public enquiry ending 18 July 2006.

¹² EN 300 220 – European Norm – Electromagnetic compatibility and Radio spectrum Matters (ERM); short range devices, Technical characteristics and test methods for radio equipment to be use in the 25 MHz to 1000 MHz frequency range with power levels ranging up to 500 mW

Figure 5 : Proposals for Implementation of Commission Decision 2005/928/EC.

Application	Frequency Band (MHz)	Maximum Permitted Radiated Power (erp)	Channel Bandwidth (kHz)	Music or Speech Permitted	Duty Cycle	Reference Standard
Hearing Aids	169.400 – 169.475	10 mW	12.5 kHz	Yes	100%	EN300220
Meter Reading	169.400 – 169.475	10 mW	12.5 kHz	No	<10%	
Asset Tracking	169.400 – 169.475	10 mW	12.5 kHz	No	<1%	
Social Alarms	169.475 – 169.4875	10 mW	12.5 kHz	No	<0.1%	
Hearing Aids	169.4875 – 169.5875	10 mW	50 kHz	Yes	100%	
Social Alarms	169.5875 – 169.600	10 mW	12.5 kHz	No	<0.1%	

Impact

10.15 The available spectrum is currently not used by other radio services hence we believe the impact on other spectrum users will be minimal.

Benefits

10.16 Short-range devices are typically mass-market and/or portable products which can easily be taken and used across borders. Differences in spectrum access conditions therefore prevent their free movement, increase their production costs and create risks of harmful interference with other radio applications and services. It is likely that the EC Decision imposes an opportunity cost by displacing other potential uses. This has not been assessed, however, the UK has no choice but to implement the EC Decision.

Implementation

10.17 IR 2030 will be updated to reflect the changes outlined.

Question 10) Ofcom would welcome comments on its proposals to implement EC Decision 2005/928/EC.

Section 11

EC Decision on Wireless Access Systems (WAS) including Radio Local Area Networks (RLANs)

Background

- 11.1 Wireless Access Systems including RLAN are a normally used as a Wireless replacement for Telecommunication Cables or Networks that may form Wide Area Networks (WAN) or Local Area Networks (LAN). WAS including RLANs use high frequency radio waves in the 5GHz band rather than wires (optical fibre or copper cable) to communicate and transmit data. It is a flexible data communication system implemented as an extension to or as an alternative for, a wired network. It is normally a high bandwidth, two way data communications network which normally operates over a limited geographic area.
- 11.2 Some of the advantages of using Radio to provide these services are shown below:
- Increased Productivity - RLAN provides "un-tethered" network and Internet access.
 - Fast and Simple Network Set-up - There are no cables to install at a users desk or work area.
 - Installation Flexibility - RLANs can be installed in places where wires can't, and they facilitate temporary set-up and relocation.
 - Reduced Cost-of-Ownership - RLANS reduce installation costs because there is no cabling; as a result, savings are greatest in frequently changing environments.
 - Scalability - Network expansion and reconfiguration may be less complicated than expanding a wired network.
- 11.3 When the EC Decision¹³ concerning RLANs in the 5 GHz band was published in July 2005 requiring member states to implement its requirements by October of that year, Ofcom's existing exemption regulation on RLANs and associated IR 2006, were already broadly in line with its technical proposals. As a result no further action was needed by Ofcom at that time to meet the requirements of the Decision.
- 11.4 The current process to amend the existing exemption Regulations and update associated IRs has nevertheless provided an opportunity to revise the current provisions for RLANs to update the terminology to reflect wording used in the Decision in order to avoid mis-interpretation between the Regulations and the EC Decision; and to remove restrictions on channel plans, modulation and service usage to bring the IR in line with Ofcom's liberalisation policy and its support for technology neutrality where possible.

¹³ Commission Decision of 11 July 2005 on the harmonised use of radio spectrum in the 5 GHz frequency band for the implementation of wireless access systems including radio local area networks (WAS/RLANs) 2005/513/EC

Proposal details

11.5 The following changes are proposed to implement the above:

- Change the title used in IR2006 and in the exemption Regulations, to “Wireless Access Systems (WAS) including RLANs operating in the frequency range 5150 – 5725 MHz”; this aligns with the title of the EC Decision;
- Remove restrictions on the service types that can be used (i.e. fixed);
- Remove restrictions on the modulation types that can be used;
- Move the Power Spectral Density (PSD) Limits mandatory. This reflects the mandatory requirements of PSD in the EC Decision and also prevents narrow band systems with high E.I.R.P operating in the band;
- Make the Nominal Carrier Frequency Allocations non-mandatory in line with the EC Decision. This will allow for more innovative approaches to spectrum use by permitting various channel size options.

Impact

11.6 The sharing analysis carried out in the band was performed in a way that reflected the more liberalised technical and use parameters proposed. This analysis demonstrated that this change in policy would result in a minimal risk of increased interference.

11.7 The changes we are proposing are fully in line with the requirements of the EC Decision on RLANs and the impact of these changes were taken into account during the original studies done within ITU and CEPT to make an allocation to WAS (including RLANs) at the World Radio Conference 2003.

Benefits

11.8 Full harmonisation with the European marketplace and increased innovation due to more liberal and technology neutral Regulations. These changes allow more technologies and services using different types of modulation techniques to be used. The changes also align the descriptions in the IR with those in the EC Decision thus avoiding any confusion between the intentions of the two documents.

Implementation

11.9 The exemption Regulations will be updated to reflect the new title and cross refer to an updated version of IR 2006.

Question 11) Ofcom would welcome comments on its proposals to implement EC Decision 2005/513/

Section 12

Editorial and Other Minor Changes

Editorial

12.1 The proposed amendment to the exemption Regulations will also address a number of editorial updates. These are described as follows:

- Removal of a small number of definitions which are not required as the terms defined are not used in the Regulations, and make minor drafting improvements;
- Update cross references to relevant IRs and ETSI standards;
- Reflect changes in the regulatory framework. Ofcom is now the regulatory body responsible for implementing the Wireless Telegraphy Act 1949; consequently references to the legacy regulator, the Radiocommunications Agency, will be replaced by references to Ofcom. Other references such as to the Secretary of State which are no longer relevant under Ofcom will also be removed.

Cordless Telephony

Background

12.2 The current exemption Regulations and IR 2011 on the Cordless Telephony Service include reference to equipment specifications CT1/CT0, CT2 and DECT (Digital Enhanced Cordless Telecommunications) exempting the use of such equipment from the need to hold a licence.

12.3 The first generation of cordless telephony technology in the UK was variously referred to as CT1/CT0 and was based upon established analogue radio technology using frequencies in the 1.7 and 47 MHz bands. Subsequent digital technology developed for cordless telephones in the late 1980s fell largely into two types, called CT2 and DECT operating in the 864.1-868.1 MHz and 1880-1900 MHz bands respectively. The market for CT2 equipment was not as successful as anticipated due largely to the increasing popularity of DECT equipment. DECT equipment benefited from being a harmonized standard and hence access to the much larger European market.

12.4 Following the consultation “Cordless Telephony: The Future of Analogue and CT2 Cordless Telephony in the United Kingdom” published in 1999 by the responsible regulator proposed to:

- Phase out the frequency band 864.1-868.1 MHz for the use of CT2. A five year notice period was initiated starting on 1 April 2000 which meant that from 1 April 2005 it would not be permitted to bring new CT2 equipment into service and sales of such equipment should cease; and
- Phase out the frequency bands 1.7 and 47 MHz for the use of CT0 and 47 and 77 MHz for the use of CT0 (extended). A five year notice period was initiated starting on 1 April 2000 which meant that from 1 April 2005 it would not be permitted to bring new CT0 equipment into service and sales of such equipment should cease;

Proposal details

- 12.5 We propose to take the opportunity afforded by the proposed amendment exercise formally to withdraw the ability to bring new CT2 or CT0 equipment into service. Equipment already in use may continue to operate.

Impact

- 12.6 Notice of these proposed changes was given in April 2000. It is understood that the market for this equipment has diminished to such an extent as to be negligible.

Benefits

- 12.7 The Regulations will implement previously announced policy and ensures consistent understanding of the policy on the use of cordless telephony equipment.

Implementation

- 12.8 The update will be achieved by amending the cross reference in the Exemption Regulations to the current version of IR 2011.

Question 12) Ofcom would welcome comments on any of the minor changes set out in this chapter and any other broader issues in relation to its approach to licence-exemption.

Annex 1

Consultation questions

Question 1) Do you agree with Ofcom's proposal to exempt users of Citizen's Band (CB) radio (and other related applications such as Community Audio Distribution) from the need to possess a Wireless Telegraphy Licence.

Question 2) Do you agree with Ofcom's proposals to permit the use of "Micro" FM transmitters in the UK, and to authorise that use by licence exemption.

Question 3) Do you agree with Ofcom's proposals to exempt users of High Density Fixed Satellite Services (HDFSS) terminals from the need to possess a Wireless Telegraphy Licence.

Question 4) Do you agree with Ofcom's proposals to exempt users of Inmarsat GAN terminals from the need to possess a Wireless telegraphy Licence.

Question 5) Do you agree with Ofcom's proposals to make available the frequency 24.05-24.25 GHz for use by short range radar (including automotive applications) devices on a licence-exempt basis.

Question 6) Do you with Ofcom's proposals to make available the band 2.4 GHz-2.4385 GHz for movement detection systems.

Question 7) Do you with Ofcom's proposals to remove the need for users of most radar level gauge equipment to possess a Wireless Telegraphy Licence.

Question 8) Do you agree with Ofcom's proposals to exempt users Digital PMR 446 from the need to possess a Wireless telegraphy Licence.

Question 9) Ofcom would welcome comments on it proposals to implements these changes concerning short range devices.

Question 10) Ofcom would welcome comments on it proposals to implement EC Decision 2005/928/.

Question 11) Ofcom would welcome comments on it proposals to implement EC Decision 2005/513/.

Question 12) Ofcom would welcome comments on any of the minor changes set out in this chapter and any other broader issues in relation to its approach to licence-exemption.

Annex 2

Regulatory Impact Assessment

Introduction

- A2.1 In accordance with good regulatory practice, where a statutory regulation is proposed, a Regulatory Impact Assessment (“RIA”) must be undertaken. The analysis presented here, when read in conjunction with the rest of this document, represents a Regulatory Impact Assessment as defined by section 7 of the Communications Act 2003 (“the Act”) for amending the Wireless Telegraphy (Exemption) Regulations 2003.
- A2.2 You should send any comments on this RIA to Ofcom by the closing date for this consultation. We will consider all comments before deciding whether to implement our proposals.
- A2.3 RIAs provide a valuable way of assessing different options for regulation and showing why the preferred option was chosen. They form part of best practice policy-making and are commonly used by other regulators. This is reflected in section 7 of the Act, which means that generally we have to carry out impact assessments where our proposals would be likely to have a significant effect on businesses or the general public, or when there is a major change in Ofcom’s activities. However, as a matter of policy Ofcom is committed to carrying out and publishing impact assessments in relation to the great majority of our policy decisions. For further information about our approach to impact assessments, see the guidelines, Better policy-making: Ofcom’s approach to impact assessment, which are on our website:
http://www.ofcom.org.uk/consult/policy_making/guidelines.pdf

Introduction

- A2.4 In accordance with government practice, where a statutory regulation is proposed, a Regulatory Impact Assessment (“RIA”) must be undertaken. The analysis presented here, when read in conjunction with the rest of this document, represents a Regulatory Impact Assessment as defined by section 7 of the Communications Act 2003 (“the Act”) for amending the Wireless Telegraphy (Exemption) Regulations 2003.
- A2.5 You should send any comments on this RIA to Ofcom by the closing date for this consultation. We will consider all comments before deciding whether to implement our proposals.
- A2.6 RIAs provide a valuable way of assessing different options for regulation and showing why the preferred option was chosen. They form part of best practice policy-making and are commonly used by other regulators. This is reflected in section 7 of the Act, which means that Ofcom will generally carry out impact assessments where proposals would be likely to have a significant effect on businesses or the general public, or when there is a major change in Ofcom’s activities. However, as a matter of policy Ofcom is committed to carrying out and publishing impact assessments in relation to the great majority of our policy decisions. In accordance with section 7 of the Act, in producing this RIA, Ofcom has had regard to such general guidance as it considers appropriate including related Cabinet Office guidance. For further information about our approach to impact

assessments, see the guidelines, Better policy-making: Ofcom's approach to impact assessment, which are on our website:

http://www.ofcom.org.uk/consult/policy_making/guidelines.pdf

Background

A2.7 In the United Kingdom, Ofcom is responsible for the authorisation of civil use of the radio spectrum and achieves this by granting Wireless Telegraphy ("WT") licences under the Wireless Telegraphy Act 1949 (the "1949 Act") and by making Regulations exempting users of particular equipment from the requirement to hold such a licence. Under section 1 of the 1949 Act, it is an offence to install or use equipment to transmit without holding a licence granted by Ofcom, unless the use of such equipment is exempted.

Proposal

A2.8 This RIA relates to the proposal to update the current statutory instrument governing the use of wireless telegraphy on a licence-exempt basis, "The Wireless Telegraphy (Exemption) Regulations 2003 (SI 2003 N0.74) ("the existing Regulations". This update will be achieved through an Amendment to the existing Regulations and the nature of the changes proposed fall into the following three categories:

- i) New requirements – where use of equipment is being made newly licence-exempt either because we are removing the need for an individual licence from an existing (licensed) type of use or introducing a new technology on a licence-exempt basis.
- ii) Changes to existing exemptions in relation to some short range devices – where currently specified conditions in the 2003 Regulations need to change either to comply with European Commission Decisions or to harmonise with Europe where such measures are viewed as beneficial;
- iii) Editorial changes – to improve the clarity of drafting in the 2003 Regulations, update relevant cross references and update references to the legacy regulator (the Radiocommunications Agency) which no longer exists, to Ofcom which is now the regulatory body with responsibility for managing the radio spectrum.

The citizen and/or consumer interest

A2.9 Ofcom takes account of the impact of its decisions upon both citizen and consumer interests in the markets it regulates. In proposing changes to the existing Regulations we have considered the wider impact beyond immediate stakeholders in the radiocommunications community and sought the advice of the office of the Ofcom Consumer Panel. We believe that the proposals will be of benefit to consumers for the following reasons:

- i) The measures proposed all concern the use of radio equipment on a licence-exempt basis which reduces the regulatory and administrative burden on Ofcom's customers;
- ii) Licence exemption is proposed only in areas where use of equipment is unlikely to cause harmful interference to other spectrum use;

- iii) In many areas the proposals relax existing restrictions e.g. the de-regulation of CB radio and the identification of micro FM transmitter equipment which could be authorised in the UK without the need for a licence;
- iv) They support the introduction of new and innovative technologies which will be of benefit to consumers in general; and specifically measures that address social groups such as the elderly and the hearing impaired.

Ofcom's policy objective

- A2.10 Ofcom seeks wherever possible, to reduce the regulatory burden upon its stakeholders, in this instance users of the radio spectrum. One way in which it can do this is to remove the need for spectrum users to apply for individual licences to authorise the use of radio equipment. In line with section 1(1) of the WT Act 1949, the use of Wireless Telegraphy (WT) equipment in the UK is authorised either by the issue of an appropriate WT Licence or through the specific exemption from the need to hold such a licence. Exemption is realised by describing the details of equipment and the parameters under which it may be used in a Statutory Instrument (secondary legislation called Regulations) which exempts users of such equipment from the need to hold a WT Licence provided they comply with the terms of the Regulations.
- A2.11 In accordance with the Communications Act 2003, Ofcom aims to exempt from licensing the use of specified equipment where it is not likely that such use will cause interference to other legitimate users of the radio spectrum or is contrary to an international obligation. Ofcom is also required to implement European Community (EC) Directives or Decisions relating to radio spectrum and from time to time this requires licence exemption arrangements to be changed.

Options considered

- A2.12 The options open to Ofcom in relation to the management of radio spectrum equipment use generally fall into the following categories:
- i) Not to authorise use in the UK e.g. for national spectrum management reasons;
 - ii) To authorise use through the issue of a WT licence;
 - iii) To authorise use through exemption from the need to hold an individual WT licence.

Analysis of options

- A2.13 In relation to the proposals outlined in this document, the first of these options has been discounted because failure to authorise use in the UK would mean that Ofcom would either fail to meet European Commission (EC) requirements which are binding in law or be in breach of its statutory obligations to authorise radio spectrum use where such use is not deemed to cause interference. Failure to provide an authorisation regime in the areas discussed in Chapters 3-11 of this consultation would also stifle the development of innovative radio spectrum applications with the subsequent loss of benefits to UK citizens and the UK economy.
- A2.14 The second option identified has also been discounted since the authorisation of use of equipment through individual licensing is either disproportionate and

impracticable or inconsistent with EC direction to adopt the least onerous regulatory approach

- A2.15 Licence exemption is therefore proposed because the analysis of the equipment contained in Chapters 3-11 shows that there is minimal risk of interference to other users of the radio spectrum; this approach is in line with Ofcom's regulatory duties and meets the demands of EC requirements providing the following benefits:
- i) Reduction of the regulatory burden;
 - ii) Introduction of innovative applications and new technologies.

Costs to business

- A2.16 Licence exemption represents the least cost regulatory approach to the authorisation of spectrum use. The proposals contained in this document do not increase costs to business and in the case of Citizens' Band radio the regulatory cost is reduced.

Costs to Ofcom

- A2.17 There are one-off administrative costs associated with making a Statutory Instrument. Ofcom considers the implementation costs to be low and offset by the benefits outlined in chapters 3-11 of this document. There may be a slight reduction in spectrum management costs in certain areas.

Annex 3

Draft IR 2030

UK Radio Interface Requirement 2030 Short Range Devices

(Version 1.3)

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- EN 300 220-2 European Norm - Electromagnetic compatibility and Radio spectrum Matters (ERM); Short range devices; Technical characteristics and test methods for radio equipment to be used in the 25 MHz to 1 000 MHz frequency range with power levels ranging up to 500 mW; Part 2: Supplementary parameters not intended for regulatory purposes.
- EN 300 220-3 European Norm - Electromagnetic compatibility and Radio spectrum Matters (ERM); Short Range Devices (SRD); Radio equipment to be used in the 25 MHz to 1 000 MHz frequency range with power levels ranging up to 500 mW; Part 3: Harmonized EN covering essential requirements under article 3.2 of the R&TTE Directive
- EN 300 330-1 ElectroMagnetic Compatibility and Radio Spectrum Matters (ERM); Short Range Devices (SRD); Radio equipment in the frequency range 9 kHz to 25 MHz and inductive loop systems in the frequency range 9 kHz to 30 MHz; Part 1: Technical characteristics and test methods
- EN 300 330-2 Electromagnetic compatibility and Radio spectrum Matters (ERM); Short Range Devices (SRD); Radio equipment in the frequency range 9 kHz to 25 MHz and inductive loop systems in the frequency range 9 kHz to 30 MHz; Part 2: Harmonized EN under article 3.2 of the R&TTE Directive
- EN 300 422-1 European Norm - Electromagnetic compatibility and Radio spectrum Matters (ERM); Wireless microphones in the 25 MHz to 3 GHz frequency range; Part 1: Technical characteristics and test methods
- EN 300 422-2 European Norm - Electromagnetic compatibility and Radio spectrum Matters (ERM); Wireless microphones in the 25 MHz to 3 GHz frequency range; Part 2: Harmonized EN under article 3.2 of the R&TTE Directive
- EN 300 440-1 Electromagnetic compatibility and Radio spectrum Matters (ERM); Short range devices; Radio equipment to be used in the 1 GHz to 40 GHz frequency range; Part 1: Technical characteristics and test methods
- EN 300 440-2 Electromagnetic compatibility and Radio spectrum Matters (ERM); Short range devices; Radio equipment to be used in the 1 GHz to 40 GHz frequency range; Part 2: Harmonized EN under article 3.2 of the R&TTE Directive
- EN 300 674 European Norm - Electromagnetic compatibility and Radio spectrum Matters (ERM); Road Transport and Traffic Telematics (RTTT); Technical characteristics and test methods for Dedicated Short Range Communication (DSRC) transmission equipment (500 kbit/s / 250 kbit/s) operating in the 5,8 GHz Industrial, Scientific and Medical (ISM) band.

- EN 300 718-1 ElectroMagnetic Compatibility and Radio Spectrum Matters (ERM); Avalanche Beacons; Transmitter-receiver systems; Part 1: Technical characteristics and test methods
- EN 300 718-2 Electromagnetic compatibility and Radio spectrum Matters (ERM); Avalanche Beacons; Transmitter-receiver systems; Part 2: Harmonized EN covering essential requirements of article 3.2 of the R&TTE Directive
- EN 300 718-3 Electromagnetic compatibility and Radio spectrum matters (ERM); Avalanche Beacons; Transmitter-receiver systems; Part 3: Harmonized EN covering essential requirements of article 3.3e of the R&TTE Directive
- EN 300 761 European Norm - Electromagnetic compatibility and Radio spectrum Matters (ERM); Automatic Vehicle Identification (AVI) for railways.
- EN 301 091-1 Electromagnetic compatibility and Radio spectrum Matters (ERM); Short Range Devices; Road Transport and Traffic Telematics (RTTT); Radar equipment operating in the 76 GHz to 77 GHz and 24 GHz range; Part 1: Technical Requirements and methods of measurement
- EN 301 091-2 Electromagnetic compatibility and Radio spectrum Matters (ERM); Short Range Devices; Road Transport and Traffic Telematics (RTTT); Radar equipment operating in the 76 GHz to 77 GHz and 24 GHz range; Part 2: Harmonized EN covering essential requirements of article 3.2 of the R&TTE Directive
- EN 301 357-1 European Norm - Electromagnetic compatibility and Radio spectrum Matters (ERM); Cordless audio devices in the range 25 MHz to 2 000 MHz; Consumer radio microphones and in-ear monitoring systems operating in the CEPT harmonized band 863 MHz to 865 MHz; Part 1: Technical characteristics and test methods
- EN 301 357-2 European Norm - Electromagnetic compatibility and Radio spectrum Matters (ERM); Cordless audio devices in the range 25 MHz to 2 000 MHz; Consumer radio microphones and in-ear monitoring systems operating in the CEPT harmonized band 863 MHz to 865 MHz; Part 2: Harmonized EN under article 3.2 of the R&TTE Directive
- EN 302 208-1 European Norm - Electromagnetic compatibility and Radio spectrum Matters (ERM); Radio Frequency Identification Equipment operating in the band 865 Hz to 868 MHz with power levels up to 2 W; Part 1: Technical requirements and methods of measurement
- EN 302 208-2 European Norm - Electromagnetic compatibility and Radio spectrum Matters (ERM); Radio Frequency Identification Equipment operating in the band 865 Hz to 868 MHz with power levels up to 2 W; Part 2: Harmonized EN under article 3.2 of the R&TTE Directive
- EN 302 288 -1 Electromagnetic compatibility and Radio spectrum Matters (ERM); Short Range Devices; Road Transport and Traffic Telematics (RTTT); Short range radar equipment operating in the 24 GHz range

- EN 302 288 -2 Electromagnetic compatibility and Radio spectrum Matters (ERM);Short Range Devices;Road Transport and Traffic Telematics (RTTT);Short range radar equipment operating in the 24 GHz range
- EN 302 372 -1 Electromagnetic compatibility and Radio spectrum Matters (ERM);Short Range Devices; Equipment for Detection and Movement; Tank Level Probing Radar (TLPR) operating in the frequency bands 5,8 GHz, 10 GHz, 25 GHz, 61 GHz and 77 GHz; Part 1: Technical characteristics and test methods
- EN 302 372 -2 Electromagnetic compatibility and Radio spectrum Matters (ERM);Short Range Devices; Equipment for Detection and Movement; Tank Level Probing Radar (TLPR) operating in the frequency bands 5,8 GHz, 10 GHz, 25 GHz, 61 GHz and 77 GHz; Part 2: Harmonized EN under article 3.2 of the R&TTE Directive

1. Foreword

- 1.1 The Radio Equipment and Telecommunications Terminal Equipment Directive 99/5/EC (R&TTE Directive) was implemented in the United Kingdom (UK) on the 8 April 2000 by The Radio Equipment and Telecommunications Terminal Equipment Regulations 2000, Statutory Instrument 2000 No. 730. In accordance with Articles 4.1 and 7.2 of Directive 1999/5/EC, this UK Interface Requirement contains the requirements for the licensing and use of Short Range Devices in the specified frequency bands.
- 1.2 Nothing in this UK Radio Interface Requirement shall preclude the need for equipment to comply with Directive 1999/5/EC.
- 1.3 It is required by the Wireless Telegraphy Act 1949 that no radio equipment is installed or used in the UK except under the authority of a licence granted by or otherwise exempted by regulations made by the Secretary of State. It is a condition of such a licence or exemption regulations as appropriate that the equipment must meet the minimum requirements specified in this UK Interface Requirement for the stated equipment types and for the stated frequency bands.
- 1.4 The requirements given in the main body of this UK Radio Interface Requirement will apply to licence exempt Short Range Devices.
- 1.5 This UK Radio Interface Requirement will be revised as necessary, for example to follow:
 - i) current technology developments for reasons related to the effective and appropriate use of the spectrum in particular maximising spectrum utilisation; and
 - ii) changes to the available spectrum allocated for Short Range Devices.
- 1.6 Ofcom has publicly consulted with manufacturers on all aspects of this UK Radio Interface Requirement. All UK Radio Interface Requirements notified under Directive 98/34/EC will be published and will be made available on the Ofcom web-site. The address for the web-site is given on the back cover of this document.
- 1.7 Further information on this UK Radio Interface Requirement can be obtained from the technical enquiry contact given on the back of this document.

2 Minimum Equipment Requirements for Operation within the UK

- 2.1 The minimum requirements in this document are made for reasons related to the effective and appropriate use of the radio spectrum, in particular maximising spectrum utilisation.
- 2.2 This UK Radio Interface Requirement gives a high level description of how the spectrum in the UK is used for Short Range Devices. It does not prescribe technical interpretation of the 'essential requirements' of Directive 1999/5/EC.
- 2.3 This UK Radio Interface Specification therefore stipulates the necessary equipment parameters for the license exemption of Short Range Devices in the UK. Tables 2.1 to 2.28 contain the relevant equipment parameters. These together with the 'essential requirement' detailed in Article 3.2 of Directive 1999/5/EC constitute the minimum equipment requirements for Short Range Devices within the UK.
- 2.4 Short Range Devices, meeting the minimum requirements outlined in this interface requirement, is exempt from licensing provided that it meets the requirements of the relevant exemption regulations. Details of the relevant exemption regulations are available from Ofcom on request.
- 2.5 The technical parameters specified in the UK Radio Interface Requirement are applied to achieve the desired level of compatibility within the Short Range Device Service and with other radiocommunications services whilst promoting enterprise, innovation and competition.
- 2.6 The duty cycle definition is taken to be as defined in the relevant ETSI Standard, which is given as reference, and CEPT/ERC Recommendation 70-03 or relevant ERC Decision.
- 2.7 This UK Radio Interface Requirement provides the necessary technical information which facilitates access to the Short Range Device Service spectrum by making clear the assumptions that are made in planning the use of the Short Range Device Service spectrum in the UK. It is not the intention of this UK Radio Interface Requirement to duplicate or impose any additional 'essential requirements' of the Directive 1999/5/EC on products. Any specified parameters within this document are for the purpose of identifying product options and not as a national de facto product requirement.

Table 2.1: Minimum Equipment Requirements for General Non-Specific Short Range Devices

Wireless telegraphy apparatus designed or adapted for Non-Specific SRD, so as to be capable of use on one or more of the frequencies or within one of the frequency bands, and at a radiated level not exceeding the maximum for such frequencies or frequency bands, for each category of apparatus, specified in the table below and subject to the following sub-paragraphs:

- (a) For Category i & ii, voice is permitted using frequency modulation only.
- (b) In category vi channel numbers available 1, 3 - 11; are available with a channel centre frequency of 173.2 MHz + (channel bandwidth x channel number).
- (c) In category vii, channel numbers 2 - 5 are available with a channel centre frequency of 173.2 MHz + (channel bandwidth x channel number).
- (d) In category viii, Telemetry and Telecommand may only be used in conjunction with telephony with a non-locking push to talk key or voice operated carrier.
- (e) In category ix, the band 417.9 - 418.1 MHz will be withdrawn for this application after the 31 December 2007. Equipment notified under the R&TTE Directive on or before 31 December 2002 may be taken into until 31 December 2007. After 31 December 2007, equipment may no longer be taken into service. However existing equipment may continue to operate within the band provided that interference is not caused to the TETRA network.
- (f) In category xii, the band may also be used for airborne telemetry based on 25 kHz channel spacing.
- (g) In categories xiii, xiv, xvi & xvii consecutive channels may be combined where a larger bandwidth is required, due to the modulation of the signal, up to the maximum sub-band frequency allocation. The total signal bandwidth, including frequency error and drift, must be contained within the allocated sub-band under all conditions.
- (h) In category xv, a channel access protocol shall be used.

Category	Frequencies or Frequency Band	Radiated Level	Channel Bandwidth	Music or Speech Permitted	Duty Cycle	Reference Standard *
i	26.995, 27.045, 27.095, 27.145, 27.195 MHz	10 mW erp	10 kHz	Yes	-	EN 300 220
ii	40.66 – 40.7 MHz	10 mW erp	10 kHz	Yes	-	
iii	49.82 – 49.98 MHz	10 mW erp	10 kHz	Yes	-	
iv	49.82 – 49.98 MHz	10 mW erp	-	Yes	-	
v	40.66 - 40.7 MHz	10 mW erp	-	No	-	
vi	173.2 - 173.35 MHz	1 mW erp	12.5 kHz	No	-	
vii	173.2 - 173.35 MHz	1 mW erp	25 kHz	No	-	
viii	173.5875, 173.6 MHz	10 mW erp	12.5 kHz	Yes	-	
ix	417.9 - 418.1 MHz	250 µW erp	-	No	-	
x	433.05 - 434.79 MHz	10 mW erp	-	No	≤10%	
xi	433.05 – 434.79 MHz	1 mW erp	-	No	-	
xii	434.04 – 434.79 MHz	10 mW erp	25 kHz	No	-	
xiii	868.0 - 868.6 MHz	25 mW erp		No	≤ 1 %	
xiv	868.7 - 869.2 MHz	25 mW erp		No	≤ 0.1 %	
xv	869.3 - 869.4 MHz	10 mW erp	≤ 25 kHz	No	≤ 10 %	
xvi	869.4 - 869.65 MHz	500 mW erp	≤ 25 kHz	No	≤10 %	

* Assumed to be fulfilled in frequency planning and defining the equipment type – compliance with which is not mandatory

xvii	869.7 – 870.0 MHz	5 mW erp		No Music. Voice allowed with LBT	up to 100 %	
xviii	2400 - 2483.5 MHz	10 mW erip	-	Yes	-	EN 300 440
xix	5725 – 5875 MHz	25 mW erip	-	-Yes	-	

* Assumed to be fulfilled in frequency planning and defining the equipment type – compliance with which is not mandatory

Table 2.2: Minimum Equipment Requirements for Industrial/Commercial Telemetry and Telecommand

Wireless telegraphy apparatus designed or adapted for Telemetry and Telecommand, so as to be capable of use on one or more of the frequencies or within one of the frequency bands, and at a radiated level not exceeding the maximum for such frequencies or frequency bands, for each category of apparatus, specified in the table below and subject to the following sub-paragraphs:

- (a) In category i, channel numbers 1, 3 to 11; are available with a channel centre frequency of 173.2 MHz + (channel bandwidth x channel number).
- (b) In category ii, channel numbers 1 to 5 are available with a channel centre frequency of 173.2 MHz + (channel bandwidth x channel number).
- (c) In category iv, channel numbers 1 to 25, 28 to 31 and 33 to 35 are available with a channel centre frequency of 458.5 MHz + (channel bandwidth x channel number).
- (d) In category v, channel numbers 1 to 12, 14 to 15 and 17 are available with a channel centre frequency of 458.5 MHz + (channel bandwidth x channel number).
- (e) In category vi, consecutive channels may be combined where a larger bandwidth is required, due to the modulation of the signal, up to the maximum sub-band frequency allocation. The total signal bandwidth, including frequency error and drift, must be contained within the allocated sub-band under all conditions.
- (f) In category viii the use is limited to remote meter reading
- (g) In category ix the use is limited to Asset Tracking and Tracing

Category	Frequencies or Frequency Band	Radiated Level	Channel Bandwidth	Music or Speech Permitted	Duty Cycle	Reference Standard *
i	173.2 - 173.35 MHz	10 mW erp	12.5 kHz	No	-	EN 300 220
ii	173.2 - 173.35 MHz	10 mW erp	25 kHz	No	-	
iii	173.2 - 173.35 MHz	10 mW erp	-	No	-	
iv	458.5 - 458.95 MHz	500 mW erp	12.5 kHz	No	-	
v	458.5 - 458.95 MHz	500 mW erp	25 kHz	No	-	
vi	869.40 to 869.65 MHz	500 mW erp	≤25 kHz	No	≤10%	
vii	2445 - 2455 MHz	100 mW erip	-	No	-	EN 300 440
viii	169.4 – 169.475 MHz	10mW erp	50kHz	No	<10%	EN 300 220
ix	169.4 – 169.475 MHz	10mW erp	50kHz	No	<1%	EN 300 220

* Assumed to be fulfilled in frequency planning and defining the equipment type – compliance with which is not mandatory

Table 2.3: Minimum Equipment Requirements for Databuoy Telemetry

Wireless telegraphy apparatus designed or adapted for Telemetry in a maritime environment, so as to be capable of use on one or more of the frequencies or within one of the frequency bands, and at a radiated level not exceeding the maximum for such frequencies or frequency bands, for each category of apparatus, specified below:-						
Category	Frequencies or Frequency Band	Radiated Level	Channel Bandwidth	Music or Speech Permitted	Duty Cycle	Reference Standard *
-	34.5 to 34.995 MHz	250 mW erp	25 kHz	No	-	EN 300 220
-	35.225 to 35.5 MHz	250 mW erp	25 kHz	No	-	

* Assumed to be fulfilled in frequency planning and defining the equipment type – compliance with which is not mandatory

Table 2.4: Minimum Equipment Requirements for Medical and Biological Applications

Wireless telegraphy apparatus designed or adapted for Telemetry and Telecommand, so as to be capable of use on one or more of the frequencies or within one of the frequency bands, and at a radiated level not exceeding the maximum for such frequencies or frequency bands, for each category of apparatus, specified in the table below and subject to the following sub-paragraphs:

- (a) In category iii, channel numbers 1 to 24 are available with channel centre frequency of 173.7 MHz + (channel bandwidth x channel number).
- (b) In category iv, channel numbers 1 to 11 are available with channel centre frequency of 173.7 MHz + (channel bandwidth x channel number).
- (c) In category vi, for use with ultra low power active medical implants only.
- (d) In category vii and viii, channel numbers 37 to 47 are available with channel centre frequency of 458.5 MHz + (channel bandwidth x channel number).
- (e) In category ix and x, channel numbers 19 to 23 are available with channel centre frequency of 458.5 MHz + (channel bandwidth x channel number).
- (f) In categories iii, iv, vii and ix, these bands may also be used for the tracking of birds.

Category	Frequencies or Frequency Band	Radiated Level	Channel Bandwidth	Music or Speech Permitted	Duty Cycle	Reference Standard *
i	300 kHz-- 30 MHz	9 dBµA/m @10 m	-	No	-	EN 300 330
ii	30 to 37.5 MHz	1 mW erp	-	No	10%	EN 300 220
iii	173.7 – 174 MHz	10 mW erp	12.5 kHz	No	-	
iv	173.7 – 174 MHz	10 mW erp	25 kHz	No	-	
v	173.7 – 174 MHz	10 mW erp	-	No	-	
vi	402 – 405 MHz	25 µW erp	300 kHz	yes	-	
vii	458.9625 – 459.1000 MHz	10 mW erp	12.5 kHz	No	-	
viii	458.9625 – 459.1000 MHz	500 mW erp	12.5 kHz	No	-	
ix	458.9625 – 459.1000 MHz	10 mW erp	25 kHz	No	-	
x	458.9625 - 459.1000 MHz	500 mW erp	25 kHz	No	-	
xi	9 – 135 kHz	30 dBµA/m @ 10m	-	No	10 %	

* Assumed to be fulfilled in frequency planning and defining the equipment type – compliance with which is not mandatory

Table 2.5: Minimum Equipment Requirements for Wideband Data Transmission Systems

Wireless telegraphy apparatus designed or adapted for Wideband Data Transmission Systems, so as to be capable of use on one or more of the frequencies or within one of the frequency bands, and at a radiated level not exceeding the maximum for such frequencies or frequency bands, for each category of apparatus, specified in the table below.		
Operational Frequency Range	Lower Frequency Range	Upper Frequency Range
	2400 MHz	2483.5 MHz
Effective Radiated Power	-10 dBW (100 mW)	
Power Density	Frequency hopping	Other forms of modulation
	-10 dBW (100 mW) per 100 kHz	-20 dBW (10 mW) per 1 MHz

* Assumed to be fulfilled in frequency planning and defining the equipment type – compliance with which is not mandatory

Table 2.6: Minimum Equipment Requirements for Short Range Indoor Data Links

Wireless telegraphy apparatus designed or adapted for the provision of short range data links, so as to be capable of use only within either of the frequency bands and at a radiated level not exceeding the maximum for such frequency bands specified in the table below and subject to the following sub-paragraph: (a) Analogue speech is not permitted.						
Category	Frequencies or Frequency Band	Radiated Level	Channel Bandwidth	Music or Speech Permitted	Duty Cycle	Reference Standard *
-	2445 – 2455 MHz	100 mW eirp	-	-	-	EN 300 440
-	5725 – 5875 MHz	25 mW eirp	-	-	-	
-	10.675 – 10.699 GHz	1 W eirp	-	-	-	

* Assumed to be fulfilled in frequency planning and defining the equipment type – compliance with which is not mandatory

Table 2.7: Minimum Equipment Requirements for Railway Applications

Wireless telegraphy apparatus designed or adapted for the purpose of railway vehicle identification or for the provision of short range data links between the track and railway vehicles, so as to be capable of use only within either of the frequency bands and at a radiated level not exceeding the maximum for such frequency bands specified in the table below,						
Category	Frequencies or Frequency Band	Radiated Level	Channel Bandwidth	Music or Speech Permitted	Duty Cycle	Reference Standard *
i	4234 kHz	9 dB μ A/m	-	No	-	EN 300 330
ii	4515 kHz	7 dBuA/m at 10 m	-	No	-	
iii	2447, 2448.5, 2450, 2451.5, or 2453 MHz	500 mW erip	≤ 1.5 MHz	No	-	EN 300 761
			Channel Mask			
iv	27.095 MHz	42 dB μ A/m @ 10 m	Fo $\pm < 5$ kHz			EN 300 330
		5 dB μ A/m @ 10 m	Fo $\pm(5$ to 200) kHz			
		- 1 dB μ A/m @ 10 m	Fo $\pm > 500$ kHz			

* Assumed to be fulfilled in frequency planning and defining the equipment type – compliance with which is not mandatory

Table 2.8: Minimum Equipment Requirements for Devices for the locating of victims in distress or at risk

Wireless telegraphy apparatus designed or adapted for the transmission of signals to aid in the locating of victims in distress or at risk, so as to be capable of producing a continuous wave only on either of the frequencies and at a radiate level not exceeding the maximum for such frequencies specified in the table below and subject to the following subparagraph:-

(a) For category i the frequency band is no longer available for new equipment, however, existing Avalanche Victim detection equipment may continue to operate within the band provided that interference is not caused to primary services.

Category	Frequencies or Frequency Band	Radiated Level	Channel Bandwidth	Music or Speech Permitted	Duty Cycle	Reference Standard *
i	2275 Hz	42 dB μ A/m @ 10 m	-	No	up to 100 %	EN 300 718
ii	457 kHz	7 dB μ A/m @ 10 m	-	No	up to 100 %	

* Assumed to be fulfilled in frequency planning and defining the equipment type – compliance with which is not mandatory

Table 2.9: Minimum Equipment Requirements for the Detection of Movement or Alert

Wireless telegraphy apparatus designed or adapted to produce a radiated field and respond to a variation in that field as a result of any intrusion or movement within that field by other devices, objects or persons in order to detect or monitor the movement of such devices, objects or persons so as to be capable of use on one or more of the frequencies within one of the frequency bands, and at a radiated level not exceeding the maximum for such frequencies or frequency bands specified in the table below and subject to the following sub-paragraphs:

- (a) In category i, this service was withdrawn on 31 December 2003: new equipment can no longer be taken into service.
- (b) Category v applications are for indoor use only.
- (c) Category ix applications are for use in mobile applications only, fixed installations are not permitted.

Category	Frequencies or Frequency Band	Radiated Level	Channel Bandwidth	Music or Speech Permitted	Other interference mitigation	Reference Standard *
i	888.0 - 889.0 MHz	500 mW erp	25 kHz	No	-	-
ii	2445 - 2455 MHz	100 mW eirp	-	No	-	EN 300 440
iii	5725 – 5875 MHz	25 mW eirp	-	No	-	
iv	10.577 - 10.597 GHz	1 W eirp	-	No	-	
v	10.675 - 10.699 GHz	1 W eirp	-	No	-	
vi	13.4 - 14.0 GHz	500 mW eirp	-	No	-	
vii	24.050 – 24.150 GHz	100 mW e.i.r.p.	-	No	Minimum sweep rate 2MHz/mS	
viii	24.150 - 24.250 GHz	2 W eirp	-	No	-	
ix	24.250 - 24.350 GHz	2 W eirp	-	No	-	
x	2400 – 2483.5	25 mW e.i.r.p.	-	No	-	

* Assumed to be fulfilled in frequency planning and defining the equipment type – compliance with which is not mandatory

Table 2.10: Minimum Equipment Requirements for Radio Frequency Identification

Wireless telegraphy apparatus designed or adapted to produce a radiated field for the purpose of illuminating and interrogating tags, on one or more of the frequencies within one of the frequency bands, and at a radiated level not exceeding the maximum for such frequencies or frequency bands specified in the table below and subject to the following sub-paragraphs:

- (a) Category i may also be used for tagging and identification applications with radiated powers up to 4 Watts eirp for indoor use only. For indoor use applications, with radiated powers greater than 500 milliwatts, a duty cycle limitation of less than 15% with a maximum transmit power on time of 30 milliseconds, may be required to allow for coexistence of other services authorised to use the band.
- (b) For category ii, iii, iv, listen before talk protocol shall be used. At an erp greater than 500mW, if the signal level at the receiver of the interrogator from other equipment operating within that channel is less than or equal to -96 dBm for a period of not less than five milliseconds immediately prior to transmission; At an erp greater than 100mW, but less than or equal to 500mW, if the signal level at the receiver of the interrogator from other equipment operating within that channel is less than or equal to -90 dBm for a period of not less than five milliseconds immediately prior to transmission; and at an erp less than or equal to 100mW, if the signal level at the receiver of the interrogator from other equipment operating within that channel is less than or equal to -83 dBm for a period of not less than five milliseconds immediately prior to transmission;
- (c) For category ii, channel numbers 1 to 15 are available with channel centre frequency of 865.1 MHz + (channel bandwidth x channel number), for illuminating and interrogating tags.
- (d) For category iii, channel numbers 4 to 13 are available with channel centre frequency of 865.1 MHz + (channel bandwidth x channel number), for illuminating and interrogating tags.
- (e) For category iv, channel numbers 5 to 15 are available with channel centre frequency of 865.1 MHz + (channel bandwidth x channel number), for illuminating and interrogating tags.
- (f) For category ii and iv devices may only transmit at an erp less than or equal to 500 mW, when the beam width is less than or equal to ninety degrees,
- (g) For category iii, devices may only transmit at an erp less than or equal to 500 mW, when the beam width is less than or equal to ninety degrees; and may only transmit at an erp greater than 500 mW, when the beam width is less than or equal to seventy degrees
- (h) For category ii, iii, iv the duration of each transmission shall be no longer than four seconds; and the interval between each transmission on the same frequency channel shall be not less than 100 milliseconds.
- (i) For category v, equipment is restricted to indoor use only. For enforcement purposes, any emission shall not exceed 500 mW when measured 10 metres from either the installed building or boundary of users premises.

Note: Frequencies from table 2.1, 2.2, 2.10 and 2.12 may also be used as long as the parameters stated in the relevant table are met.

<u>Category</u>	<u>Frequencies or Frequency Band</u>	<u>Radiated Level</u>	<u>Channel Bandwidth</u>	<u>Music or Speech Permitted</u>	<u>Duty Cycle</u>	<u>Reference Standard *</u>
i	2446 – 2454 MHz	500 mW eirp	-	No	-	EN 300 440
ii	865 to 868 MHz	100 mW erp	200 kHz	No	(b)	EN 302 208
iii	865.6 to 867.6 MHz	2 W erp	200 kHz	No	(b)	
iv	865.6 to 868 MHz	500 mW erp	200 kHz	No	(b)	
v	2446 - 2454	4 W e.i.r.p.		No	15%	EN 300 440
vi	13.553 < f ≤ 13.567 MHz	60 dBµA/m @ 10 m	-	No		EN300 330

* Assumed to be fulfilled in frequency planning and defining the equipment type – compliance with which is not mandatory

Table 2.11: Minimum Equipment Requirements for Road Transport and Traffic Telematics

Wireless telegraphy apparatus designed or adapted to aid in the management, control or flow of transport and traffic :-						
(a) For the provision of short range data links which respond to a signal initiated by, in the case of categories i and ii below, a network operator; or by, in the case of category ii or iii, a private system used and operated by the owner or persons authorised by the owner; so as to be capable of use only within either of the frequency bands and at a radiated level not exceeding the maximum for such frequency bands specified in the table below:-						
Category	Frequencies or Frequency Band	Radiated level	Channel Bandwidth	Music or speech permitted	Duty Cycle	Reference Standard *
i	5795 - 5805 MHz	≤ 2 W eirp	-	No	-	EN 300 674
ii	5805 - 5815 MHz	≤ 2 W eirp	-	No	-	
iii	5805 - 5815 MHz	≤ 2 W eirp	-	No	-	EN 300 440
(b) For the provision of short range on-board vehicle and infrastructure radar so as to be capable of use only within the frequency band and at a radiated level not exceeding the maximum for such frequency band specified in the table below:-						
Category	Frequencies or Frequency Band	Radiated level	Channel Bandwidth	Music or speech permitted	Duty Cycle	Reference Standard *
-	76 - 77 GHz	≤ 55 dBm peak power	-	No	-	EN 301 091

* Assumed to be fulfilled in frequency planning and defining the equipment type – compliance with which is not mandatory

Table 2.12: Minimum Equipment Requirements for Inductive Applications

The table has been amended for clarification. Under the heading Radiated level the maximum field strength is shown for the frequency range. Note these are not sub-bands.

<p>That part of an induction system designed or adapted to produce:-</p> <p>(a) controlled magnetic field; and</p> <p>(b) a predetermined recognisable signal when operating within the magnetic field; so as to be capable of use only within the frequency bands, and at a radiated level, not exceeding the maximum for such frequency bands, specified in the table below:-</p> <p>(c) Electric field equipment may operate in the in the internationally recognised Industrial, Scientific & Medical (ISM) bands 6765 to 6795 kHz and 13.553 to 13.567 MHz, to an equivalent e.r.p to the stated magnetic field.</p>						
Category	Frequencies or Frequency Band	Radiated Level		Music or Speech Permitted	Duty Cycle	Reference Standard *
-	9 – 185 kHz	72 dBμA/m @ 10 m	9 < f ≤ 30 kHz	Yes	-	EN 300 330
		72 dBμA/m descending 3 dB/octave above 30 kHz	30 < f ≤ 59.75 kHz			
		42 dBμA/m	59.75 < f ≤ 60.25 kHz			
		69 dBμA/m descending 3 dB/octave	60.25 < f ≤ 70 kHz			
		42 dBμA/m @ 10 m	70 < f ≤ 119 kHz			
		66 dBμA/m descending 3 dB/octave	119 < f ≤ 135 kHz			
		48 dBμA/m @ 10 m	135 < f ≤ 185 kHz	No		
-	9 - 185 kHz	48 dBμA/m @ 10 m	-	Yes (music is not permitted)	-	
-	148.5 to 1600 kHz	-5 dBμA/m at 10 m	-	No	=	
-	240 - 315 kHz	24 dBμA/m @ 10 m	-	No	-	
-	2 - 30 MHz	-9.5 dBμA/m @ 10 m	-	Yes (music is not permitted)	-	
-	2 – 30 MHz	9 dBμA/m @ 10 m	2 < f ≤ 3.155 MHz	No	-	
		13.5dBμA/m @ 10 m	3.155 < f ≤ 3.400 MHz	No	=	
		9 dBμA/m @ 10 m	3.400 < f ≤ 6.795 MHz	No	-	
		42 dBμA/m @ 10 m	6.765 < f ≤ 6.795 MHz	Yes	-	
		9 dBμA/m @ 10 m	6.795 < f ≤ 13.533 MHz	No	-	

* Assumed to be fulfilled in frequency planning and defining the equipment type – compliance with which is not mandatory

		21.5 dB μ A/m @ 10 m	13.533 < f \leq 13.553 MHz	No	-	
		42 dB μ A/m @ 10 m	13.553 < f \leq 13.567 MHz	Yes	-	
		9 dB μ A/m @ 10 m	13.567 < f \leq 26.957 MHz	No		
		42 dB μ A/m @ 10 m	26.957 < f \leq 27.283 MHz	No	-	
		9 dB μ A/m @ 10 m	27.283 < f \leq 30 MHz	No	-	

* Assumed to be fulfilled in frequency planning and defining the equipment type – compliance with which is not mandatory

Table 2.13: Minimum Equipment Requirements for Metal Detectors

That part of an induction system designed or adapted to produce:- (a) to produce a controlled magnetic field; and (b) a predetermined recognisable signal when operating within that magnetic field; so as to be capable of use only within the frequency bands, and at a radiated level, not exceeding the maximum for such frequency bands, specified in the table below:-						
Category	Frequencies or Frequency Band	Radiated Level	Channel Bandwidth	Music or Speech Permitted	Duty Cycle	Reference Standard *
-	9 - 148.5 kHz	70 dB μ V/m @ 6 m	-	No	-	EN 300 330

* Assumed to be fulfilled in frequency planning and defining the equipment type – compliance with which is not mandatory

Table 2.14: Minimum Equipment Requirements for Alarms

<p>Wireless telegraphy apparatus designed or adapted;-</p> <p>(a) to generate or indicate an alarm condition; or (b) to arm or disarm the alarm system;</p> <p>so as to be capable of use on one or more of the frequencies within one of the frequency bands, and at a radiated level not exceeding the maximum for such frequencies or frequency bands specified in the table below and subject to the following sub-paragraph:-</p> <p>(a) In category i, consecutive channels may be combined where a larger bandwidth is required, due to the modulation of the signal, up to the maximum sub-band frequency allocation. The total signal bandwidth, including frequency error and drift, must be contained within the allocated sub-band under all conditions.</p>						
Category	Frequencies or Frequency Band	Radiated Level	Channel Bandwidth	Music or Speech Permitted	Duty Cycle	Reference Standard *
<u>i</u>	868.60 – 868.70 MHz	10 mW erp	≤ 25 kHz	No	≤ 0.1%	EN 300 220
<u>ii</u>	869.25 – 869.30 MHz	10 mW erp	≤ 25 kHz	No	≤ 0.1%	
<u>iii</u>	869.65 – 869.70 MHz	25 mW erp	≤ 25 kHz	No	≤ 10%	

* Assumed to be fulfilled in frequency planning and defining the equipment type – compliance with which is not mandatory

Table 2.15: Minimum Equipment Requirements for Social Alarms for the Elderly and Infirm

Wireless telegraphy apparatus designed or adapted;- (a) to generate or indicate an alarm condition; or (b) to arm or disarm the alarm system; so as to be capable of use on one or more of the frequencies, and at a radiated level not exceeding the maximum for such frequencies as specified in the table below:-						
Category	Frequencies or Frequency Band	Radiated Level	Channel Bandwidth	Music or Speech Permitted	Duty Cycle	Reference Standard *
-	27.450, 34.925, 34.950, 34.975 MHz	500 μ W erp	12.5 kHz	No	-	EN 300 220
-	869.2 - 869.25 MHz	10 mW erp	\leq 25 kHz	No	\leq 0.1%	
-	169.4750 – 169.4875 MHz	10 mW e.r.p.	12.5 kHz	No	< 0.1 %	
-	169.5875 – 169.600 MHz	10 mW e.r.p.	12.5 kHz	No	< 0.1 %	

* Assumed to be fulfilled in frequency planning and defining the equipment type – compliance with which is not mandatory

Table 2.16: Minimum Equipment Requirements for Vehicle Paging Alarms

Wireless telegraphy apparatus designed or adapted: (a) to generate or indicate an alarm condition so as to be capable of use on one or more of the frequencies, and at a radiated level not exceeding the maximum for such frequencies as specified in the table below. (b) for category ii, may also be used to arm or disarm the alarm system at a radiate level not exceeding 1 mW:-						
Category	Frequencies or Frequency Band	Radiated Level	Channel Bandwidth	Music or Speech Permitted	Duty Cycle	Reference Standard *
i	47.4 MHz	100 mW erp	12.5 kHz	No	-	EN 300 220
ii	458.90 MHz	100 mW erp	12.5 kHz	No	-	

* Assumed to be fulfilled in frequency planning and defining the equipment type – compliance with which is not mandatory

Table 2.17: Minimum Equipment Requirements for General Alarms Associated With Marine Applications Including Fixed Shore Installations

Wireless telegraphy apparatus designed or adapted:- (a) to generate, or indicate an alarm condition; or (b) to arm or disarm the alarm system; so as to be capable of use on the frequency and at a radiated level not exceeding the maximum for such frequency as specified in the table below, including use on land for the storage or transportation of vessels:-						
Category	Frequencies or Frequency Band	Radiated Level	Channel Bandwidth	Music or Speech Permitted	Duty Cycle	Reference Standard *
-	161.275 MHz	10 mW erp	12.5 kHz	No	-	EN 300 220

* Assumed to be fulfilled in frequency planning and defining the equipment type – compliance with which is not mandatory

Table 2.18: Minimum Equipment Requirements for Mobile, Transportable and Lone Worker Safety Alarms

Wireless telegraphy apparatus designed or adapted:-						
(a) to generate or indicate an alarm condition; or (b) to arm or disarm the alarm system; so as to be capable of use on one or more of the frequencies and at a radiated level not exceeding the maximum for such frequencies as specified in the table below:-						
Category	Frequencies or Frequency Band	Radiated Level	Channel Bandwidth	Music or Speech Permitted	Duty Cycle	Reference Standard *
-	173.1875 MHz	10 mW erp	12.5 kHz	No	-	EN 300 220
-	458.8375 MHz	100 mW erp	12.5 kHz	No	-	

* Assumed to be fulfilled in frequency planning and defining the equipment type – compliance with which is not mandatory

Table 2.19: Minimum Equipment Requirements for Fixed Alarms

Wireless telegraphy apparatus designed or adapted:-						
(a) to generate or indicate an alarm condition; or						
(b) to arm or disarm the alarm system;						
so as to be capable of use on one or more of the frequencies, and at a radiated level not exceeding the maximum for such frequencies as specified in the table below:-						
Category	Frequencies or Frequency Band	Radiated Level	Channel Bandwidth	Music or Speech Permitted	Duty Cycle	Reference Standard *
-	173.225 MHz	10 mW erp	12.5 kHz	No	-	EN 300 220
-	173.225 MHz	10 mW erp	25 kHz	No	-	
-	458.825 MHz	100 mW erp	12.5 kHz	No	-	

* Assumed to be fulfilled in frequency planning and defining the equipment type – compliance with which is not mandatory

Table 2.20: Minimum Equipment Requirements for Model Control

Wireless telegraphy apparatus designed or adapted for Telemetry or Telecommand so as to be capable of use on one or more of the frequencies or within one of the frequency bands, and at a radiated level not exceeding the maximum for such frequencies or frequency bands, for each category of apparatus, specified in the table below and subject to the following sub-paragraphs:

- (a) In category i channel numbers 1 to 32 are available with channel centre frequency of 26.955 MHz + (channel bandwidth x channel number), for Telecommand to control the movement of models in general.
- (b) In category ii channel numbers 1 to 36 are available with channel centre frequency of 34.94 MHz + (channel bandwidth x channel number), for Telecommand to control the movement of airborne models only.
- (c) In category iii channel numbers 1 to 34 are available with channel centre frequency of 40.655 MHz + (channel bandwidth x channel number), for Telecommand to control the movement of models on the ground, on water or under the water.
- (d) In category v channel numbers 1 to 40 are available with channel centre frequency of 458.4875 MHz + (channel bandwidth x channel number), for Telecommand to control the movement of models in general.
- (e) In category iv and v, for Telemetry to provide data from the model only, including airborne models.

Categories	Frequencies or Frequency Band	Radiated Level	Channel Bandwidth	Music or Speech Permitted	Duty Cycle	Reference Standard *
i	26.96 - 27.28 MHz	100 mW	10 kHz	No	-	EN 300 220
ii	34.945 - 35.305 MHz	100 mW	10 kHz	No	-	
iii	40.66 - 41.00 MHz	100 mW	10 kHz	No	-	
iv	433.05 - 434.79 MHz	1 mW	25 kHz	No	-	
v	434.04 – 434.79 MHz	10 mW	25 kHz	No	-	
vi	458.5 - 459.5 MHz	100 mW	25 kHz	No	-	

* Assumed to be fulfilled in frequency planning and defining the equipment type – compliance with which is not mandatory

Table 2.21: Minimum Equipment Requirements for Radio Microphones

Wireless telegraphy apparatus designed or adapted for Telephony, for the purpose of aids to project personal voice or music so as to be capable of use on one or more of the frequencies within the frequency bands, and at a radiated level not exceeding the maximum for such frequencies or frequency bands, for each category of apparatus, specified in the table below and subject to the following sub-paragraphs:-

- (a) In category i channel numbers 10 to 35 are available; where the channel centre frequency is equal to 173.3 MHz (channel bandwidth x channel number).
- (b) In category ii, channel numbers 1 to 7 are available; where the channel centre frequency is equal to 173.6 MHz (channel bandwidth x channel number).
- (c) For categories ii , the maximum radiated power may be increased to 50 mW erp for a radio microphone which is intended to be worn next to or strapped to the user's body.

Category	Frequencies or Frequency Band	Radiated Level	Channel Bandwidth	Music or Speech Permitted	Duty Cycle	Reference Standard *
<u>i</u>	173.775 to 175.075 MHz	10 mW erp	50 kHz	Yes	-	
<u>ii</u>	173.7 to 175.1 MHz	10 mW erp	200 kHz	Yes	-	
<u>iii</u>	863 - 865 MHz	10 mW erp	≤ 200 kHz	Yes	-	

* Assumed to be fulfilled in frequency planning and defining the equipment type – compliance with which is not mandatory

Table 2.22: Minimum Equipment Requirements for Radio Hearing Aids

Wireless telegraphy apparatus designed or adapted for Telephony, for the purpose of hearing aids for the handicapped, so as to be capable of use on one or more of the frequencies within the frequency bands, and at a radiated level not exceeding the maximum for such frequencies or frequency bands, for each category of apparatus, specified in the table below and subject to the following sub-paragraphs:-

(a) In category i channel numbers 1 to 5 and 7 to 9 are the preferred channels, channels 10 to 35 may be used as an alternative but are shared with other applications including radio microphones. The channel centre frequency is equal to 173.3 MHz + (channel bandwidth x channel number).

Category	Frequencies or Frequency Band	Radiated Level	Channel Bandwidth	Music or Speech Permitted	Duty Cycle	Reference Standard *
i	173.325 to 175.075 MHz	2 mW erp	50 kHz	Yes	-	EN 300 422
ii	169.4000 - 169.4750 MHz	10 mW e.r.p.	50 kHz		100%	EN 300 220
iii	169.4875 - 169.5875 MHz	10 mW e.r.p.	50 kHz		100%	EN 300 220

* Assumed to be fulfilled in frequency planning and defining the equipment type – compliance with which is not mandatory

Table 2.23: Minimum Equipment Requirements for Wireless Audio Applications

<p>Wireless telegraphy apparatus designed or adapted for Telephony, for the purpose of providing a short range radio link between the audio output of a device and, so as to be capable of use on one or more frequencies within the frequency band, and at a radiated level not exceeding the maximum for such frequencies or frequency bands as specified in the table below and subject to the following sub-paragraphs:-</p> <p>(a) Frequency band in category ii may be used for wide band applications, where high quality audio is required. The whole band may be used but should note the use in category iii.</p> <p>(b) Frequency band in category iii may be used for narrow band applications:-</p>						
Category	Frequencies or Frequency Band	Radiated Level	Channel Bandwidth	Music or Speech Permitted	Duty Cycle	Reference Standard *
i	36.61 - 36.79 MHz 37.01 - 37.19 MHz	10 μ W erp	-	Yes	-	EN 300 220
ii	863 - 865 MHz	10 mW erp		Yes	-	EN 301 357
iii	864.8 - 865.0 MHz	10 mW erp	≤ 50 kHz	Yes	-	EN 300 220
iv	2400 – 2483.5 MHz	10 mW eirp	≤ 300 kHz	Yes	-	EN 300 422
v	87.5 – 108 MHz	50 nW e.r.p.	200 kHz	Yes	-	EN 301 357

* Assumed to be fulfilled in frequency planning and defining the equipment type – compliance with which is not mandatory

Table 2.24: Minimum Equipment Requirements for Wireless Video Cameras - Non Broadcasting

Wireless telegraphy apparatus designed or adapted for Television, so as to be capable of use only within either of the frequency bands and at a radiated level not exceeding the maximum for such frequency bands, specified in the table below and subject to the following sub-paragraphs:-

(a) Where required, associated audio may also be used within the specified frequency band.

(b) Category ii may also be used for airborne use.

Categories	Frequencies or Frequency Band	Radiated Level	Channel Bandwidth	Music or Speech Permitted	Duty Cycle	Reference Standard *
i	1394 MHz	500 mW eirp	10 MHz	Yes	-	EN 300 440
ii	2400 – 2483.5 MHz	10 mW eirp	20 MHz	Yes	-	
iii	5725 – 5875 MHz	25 mW eirp	20 MHz	Yes	-	

* Assumed to be fulfilled in frequency planning and defining the equipment type – compliance with which is not mandatory

Table 2.25: Minimum Equipment Requirements for Video Distribution for Private Use

Wireless telegraphy apparatus designed or adapted for Television, so as to be capable of use only within the frequency band and at a radiated level not exceeding the maximum for such frequency band, specified in the table below and subject to the following sub-paragraph;						
(a) Where required, associated audio may also be used within the specified frequency band.						
(b) Music and speech only permitted when associated with the video application						
Category	Frequencies or Frequency Band	Radiated Level	Channel Bandwidth	Music or Speech Permitted	Duty Cycle	Reference Standard *
-	1394 MHz	10 mW eirp	10 MHz	Yes	-	EN 300 440

* Assumed to be fulfilled in frequency planning and defining the equipment type – compliance with which is not mandatory

Table 2.26: Minimum Equipment Requirements for 24 GHz Vehicle Radar

<p>Wireless telegraphy apparatus designed or adapted for road vehicle-based radar functions for collision mitigation and traffic safety applications , so as to be capable of use only within the frequency band and at a radiated level not exceeding the maximum for such frequency band, specified in the table below and subject to the following paragraphs</p> <p>(a) Automotive short-range radar equipment mounted on vehicles shall only operate when the vehicle is active</p> <p>(b) Automotive short-range radar equipment originally installed or replacing one so installed in a vehicle which will be or which has been registered, placed on the market or put into service in the EC;</p> <p>(c) Emissions within the 23,6-24,0 GHz band that appear 30% or greater above the horizontal plane shall be attenuated by at least 25 dB for automotive short-range radar equipment placed on the market before 2010 and thereafter by at least 30 dB.</p>						
Category	Frequencies or Frequency Band	Radiated Level	Channel Bandwidth	Music or Speech Permitted	Duty Cycle	Reference Standard *
i	21.65 - 22 GHz	Peak power density 0 dBm/50MHz e.i.r.p. Maximum mean power density -61,3 dBm/MHz e.i.r.p.	-	No	-	EN 302 288
ii	22 – 26.65 GHz	Peak power density 0 dBm/50MHz e.i.r.p. Maximum mean power density – 41,3 dBm/MHz e.i.r.p.				

24 GHz Vehicle Radar regulations are detailed in Statutory Instrument 2005 No. 1585 The Wireless Telegraphy (Automotive Short Range Radar) (Exemption) (No. 2) Regulations 2005 and are set in accordance with COMMISSION DECISION of 17 January 2005 on the harmonisation of the 24 GHz range radio spectrum band for the time-limited use by automotive short-range radar equipment in the Community (*notified under document number C(2005) 34*)]

* Assumed to be fulfilled in frequency planning and defining the equipment type – compliance with which is not mandatory

Table 2.27: Minimum Equipment Requirements for 79 GHz Vehicle Radar

Wireless telegraphy apparatus designed or adapted for road vehicle based radar functions for collision mitigation and traffic safety applications , so as to be capable of use only within the frequency band and at a radiated level not exceeding the maximum for such frequency band, specified in the table below						
Category	Frequencies or Frequency Band	Radiated Level	Channel Bandwidth	Music or Speech Permitted	Duty Cycle	Reference Standard *
-	77 – 81 GHz	55 dBm e.i.r.p Maximum mean power density 3 dBm/MHz e.i.r.p Maximum mean power density outside a vehicle resulting from the peration of one short-range radar shall not exceed - 9 dBm / MHz e.i.r.p.	-	No	-	No present harmonised standard

Note. 79 GHz Vehicle Radar regulations are detailed in Statutory Instrument 2005 No. 353 The Wireless Telegraphy (Automotive Short Range Radar) (Exemption) Regulations 2005 and are set in accordance with 2004/545/EC: Commission Decision of 8 July 2004 on the harmonisation of radio spectrum in the 79 GHz range for the use of automotive short-range radar equipment in the Community (notified under document number C(2004) 2591)

* Assumed to be fulfilled in frequency planning and defining the equipment type – compliance with which is not mandatory

Table 2.28: Minimum Equipment Requirements for Radar Level Gauges

Wireless telegraphy apparatus designed or adapted for level measurement applications , so as to be capable of use only within the frequency band and at a radiated level not exceeding the maximum for such frequency band, specified in the table below						
Category	Frequencies or Frequency Band	Radiated Level	Channel Bandwidth	Music or Speech Permitted	Duty Cycle	Reference Standard *
i	5150 MHz to 7100 MHz	25 milliwatts Peak 0.1 milliwatt average	-	No	-	EN 302 372
ii	8500 MHz to 10.600 GHz	25 milliwatts Peak 0.1 milliwatt average	-	No	-	
iii	10.700 GHz to 10.850 GHz	25 milliwatts Peak 0.1 milliwatt average	-	No	-	
iv	24.3 to 27.7 GHz	100 milliwatts peak 0.36 milliwatts average	-	No	-	

Note; Radar Level Gauges may be operated when licensed in the band 10.6 to 10.7 GHz.

* Assumed to be fulfilled in frequency planning and defining the equipment type – compliance with which is not mandatory

Annex A. Additional Performance Parameters (Informative)

- A.1 For SRDs operating on radio frequencies between 25 MHz and 1 GHz, with power levels up to 500 mW, the guidance published in EN 300 220-2 should ensure reasonable reliability of the radio link and performance of the receiver.

* Assumed to be fulfilled in frequency planning and defining the equipment type – compliance with which is not mandatory

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Annex 4

Draft EC Decision on Short Range Devices



EUROPEAN COMMISSION
Information Society and Media Directorate-General
Electronic Communications Policy
Radio Spectrum Policy

Brussels, 30 June 2006
DG INFSO/B4

RSCOM06-26 Rev

INTERNAL DOCUMENT

RADIO SPECTRUM COMMITTEE

Working Document

Subject: Draft Commission Decision on harmonisation of the radio spectrum for use by short-range radio devices

This is a Committee working document, which does not necessarily reflect the official position of the Commission. No inferences should be drawn from this document as to the precise form or content of future measures to be submitted by the Commission. The Commission accepts no responsibility or liability whatsoever with regard to any information or data referred to in this document.



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INTRODUCTION

Following the discussions in previous RSC meetings and the political agreement reached at RSC#15, this document contains the final draft version of the proposed SRD Decision. The results of the experts meeting held on 16 March to finalise the technical parameters of the annex have been incorporated in this draft Decision. Limited additional changes were introduced as a result of the Commission inter-service consultation procedure.

This Decision is accompanied by the explanatory memorandum (see document RSCOM06-03 Rev1) which provides background information on this Decision and was endorsed by the Radio Spectrum Committee (RSC#15).

If supported by RSC#16, this draft Decision shall be submitted Member States for a formal regulatory opinion by written procedure as soon as all translations will be available.

Draft

COMMISSION DECISION

of [...]

on harmonisation of the radio spectrum for use by short-range devices

THE COMMISSION OF THE EUROPEAN COMMUNITIES,

Having regard to the Treaty establishing the European Community,

Having regard to Decision No 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)¹, and in particular Article 4(3) thereof,

Whereas:

- (1) Given their pervasive use in the European Community and in the world, short-range devices are playing an increasing role in the economy and in the daily life of citizens, with different types of applications such as alarms, local communications equipment, door openers or medical implants. The development of applications based on short-range devices in the European Community could also contribute to achieving specific Community policy goals, such as completion of the internal market, promotion of innovation and research, and development of the information society.
- (2) Short-range devices are typically mass-market and/or portable products which can easily be taken and used across borders; differences in spectrum access conditions therefore prevent their free movement, increase their production costs and create risks of harmful interference with other radio applications and services. In order to reap the benefits of the internal market for this type of devices, to support the competitiveness of EU manufacturing industry by increasing economies of scale and to lower costs for consumers, radio spectrum must therefore be made available in the Community on the basis of harmonised technical conditions.
- (3) As this type of device uses radio spectrum with low emission power and short-range emission capability, its potential to cause interference to other spectrum users is typically limited. Therefore such devices can share frequency bands with other services which are, or are not, subject to authorisation, without causing harmful interference, and can co-exist with other short-range devices. Their use should therefore not be subject to individual authorisation pursuant to the Authorisation

¹ OJ L 108, 24.4.2002, p. 1.

Directive 2002/20/EC². In addition, radiocommunications services, as defined in the International Telecommunications Union Radio Regulations, have priority over short-range devices and are not required to ensure protection of particular types of short-range devices against interference. Since no protection against interference can therefore be guaranteed to users of short-range devices, it is the responsibility of manufacturers of short-range devices to protect such devices against harmful interference from radiocommunications services as well as from other short-range devices operating in accordance with the applicable Community or national regulations. Pursuant to Directive 1999/5/EC of the European Parliament and of the Council of 9 March 1999 on radio equipment and telecommunications terminal equipment and the mutual recognition of their conformity (the R&TTE Directive)³ manufacturers should ensure, that short-range devices effectively use the radio frequency spectrum so as to avoid harmful interference to other short-range devices.

- (4) A significant number of these devices are already classified, or are likely to be in the future, as “Class 1” equipment under Commission Decision 2000/299/EC of 6 April 2000 establishing the initial classification of radio equipment and telecommunications terminal equipment and associated identifiers⁴ adopted pursuant to Article 4(1) of the R&TTE Directive. Decision 2000/299/EC recognises the equivalence of radio interfaces meeting the conditions of “Class 1” so that radio equipment can be placed on the market and put into service without restriction in the whole Community.
- (5) As the availability of harmonised spectrum and associated conditions of use determine “Class 1” classification, this Decision will further consolidate the continuity of such classification once achieved.
- (6) On 11 March 2004 the Commission therefore issued a mandate⁵ to the CEPT, pursuant to Article 4(2) of the Radio Spectrum Decision, to harmonise frequency use for short-range devices. In response to that mandate, in its report⁶ of 15 November 2004 the CEPT established the list of voluntary harmonisation measures which exist in the European Community for short-range devices and stated that a more binding commitment is required from Member States in order to ensure the legal stability of the frequency harmonisation achieved in the CEPT. Therefore, it is necessary to establish a mechanism to make such harmonisation measures legally binding in the European Community.
- (7) Member States may allow, at national level, equipment to operate under more permissive conditions than specified in this Decision. However, in this case such equipment could not operate throughout the Community without restrictions and

² OJ L 108, 24.4.2002, p. 21.

³ OJ L 91, 7.4.1999, p. 10.

⁴ OJ L 97, 19.4.2000, p. 13.

⁵ Mandate to CEPT to analyse further harmonisation of frequency bands in use for short-range devices.

⁶ Final report by the ECC in response to the EC mandate to the CEPT on short-range devices radio spectrum harmonisation.

would therefore be considered as “Class 2” equipment under the classification in the R&TTE Directive.

- (8) Harmonisation under this Decision does not exclude the possibility for a Member State to apply, where justified, transitional periods or radio spectrum-sharing arrangements pursuant to Article 4(5) of the Radio Spectrum Decision. These should be kept to the minimum, as they would limit the benefits of “Class 1” classification.
- (9) This general technical harmonisation Decision applies without prejudice to European Community technical harmonisation measures which apply to specific bands and types of devices, such as Commission Decision 2004/545/EC of 8 July 2004 on the harmonisation of radio spectrum in the 79 GHz range for the use of automotive short-range radar equipment in the Community⁷, Commission Decision 2005/50/EC of 17 January 2005 on the harmonisation of the 24 GHz range radio spectrum band for the time-limited use by automotive short-range radar equipment in the Community⁸, the Commission Decision on the harmonised use of radio spectrum in the 5 GHz frequency band for the implementation of wireless access systems including radio local area networks (WAS/RLANs)⁹ or Commission Decision 2005/928/EC of 20 December 2005 on the harmonisation of the 169,4-169,8125 MHz frequency band in the Community¹⁰.
- (10) The use of spectrum is subject to the requirements of Community law for public health protection in particular Directive 2004/40/EC¹¹ and Recommendation 1999/519/EC¹². Health protection for radio equipment is ensured by conformity of such equipment to the essential requirements pursuant to the R&TTE Directive.
- (11) Due to the rapid changes in technology and societal demands, new applications for short-range devices will emerge, which will require constant scrutiny of spectrum harmonisation conditions, taking into account the economic benefits of new applications and the requirements of industry and users. Member States will have to monitor these evolutions. Regular updates of this Decision will therefore be necessary to respond to new developments in the market and technology. The Annex will be reviewed at least once every year on the basis of the information collected by Member States and provided to the Commission. A review may also be started in cases where appropriate measures will be taken by a Member State pursuant to Article 9 of the R&TTE Directive. If a review reveals the necessity to adapt the Decision, changes

⁷ OJ L 241, 13.7.2004, p. 66.

⁸ OJ L 21, 25.1.2005, p. 15.

⁹ OJ L 187, 19.7.2005, p. 22.

¹⁰ OJ L 344, 27.12.2005, p. 47.

¹¹ Directive 2004/40/EC of the European Parliament and of the Council of 29 April 2004 on the minimum health and safety requirements regarding the exposure of workers to the risks arising from physical agents (electromagnetic fields), OJ L 159, 30.4.2004, p. 1.

¹² Council Recommendation of 12 July 1999 on the limitation of exposure of the general public to electromagnetic fields (0 Hz to 300 GHz), OJ L 199, 30.7.1999, p. 59.

will be decided following the procedures specified in the Radio Spectrum Decision for the adoption of implementing measures. The updates could include transition periods to accommodate legacy situations.

- (12) The measures provided for in this Decision are in accordance with the opinion of the Radio Spectrum Committee,

HAS ADOPTED THIS DECISION:

Article 1

The purpose of this Decision is to harmonise the frequency bands and the related technical parameters for the availability and efficient use of radio spectrum for short-range devices so that such devices may benefit from “Class 1” classification under Commission Decision 2000/299/EC.

Article 2

For the purpose of this Decision:

1. “short-range device” means radio transmitters which provide either unidirectional or bi-directional communication and which transmit over a short distance at low power;
2. “non-interference and non-protected basis” means that no harmful interference may be caused to any radiocommunication service and that no claim may be made for protection of these devices against harmful interference originating from radiocommunication services.

Article 3

1. Member States shall designate and make available, on a non-exclusive, non-interference and non-protected basis, the frequency bands for the types of short-range devices, subject to the specific conditions and by the implementation deadline, as laid down in the Annex to this Decision.
2. Notwithstanding paragraph 1, Member States may request transitional periods and/or radio spectrum-sharing arrangements, pursuant to Article 4(5) of the Radio Spectrum Decision;
3. This Decision is without prejudice to the right of Member States to allow the use of the frequency bands under less restrictive conditions than specified in the Annex to this Decision.

Article 4

Member States shall keep the use of the relevant bands under scrutiny and report their findings to the Commission to allow regular and timely review of the Decision.

Article 5

This Decision is addressed to the Member States.

Done at Brussels, [...]

For the Commission

[...]

Member of the Commission

Annex - Harmonised frequency bands and technical parameters for short-range devices

Type of short-range device	Frequency band(s)/Single frequencies	Maximum power/field strength	Additional regulatory parameters Mitigation requirements	Other restrictions	Implementation deadline
Non-specific short-range devices ¹³	26.957-27.283 MHz	10 mW effective radiated power (e.r.p.), which corresponds to 42 dB μ A/m at 10 meters		Video applications are excluded	[1 January 2007]
	40.660-40.700 MHz	10 mW e.r.p.		Video applications are excluded	[1 January 2007]
	433.05–434.79 MHz	10 mW e.r.p.	Duty cycle ¹⁴ : up to 10%	Audio and voice signals, and video applications, are excluded	[1 January 2007]
	868.,0-868.6 MHz	25 mW e.r.p.	Duty cycle ¹⁴ : up to 1%	Video applications are excluded	[1 January 2007]

¹³ This category is available for any type of applications which fulfil the technical conditions (typical uses are telemetry, telecommand, alarms, data in general and other similar applications).

¹⁴ Duty cycle is defined as the percentage of total time during which the equipment is actively transmitting (on one carrier frequency) in any one-hour period.

Type of short-range device	Frequency band(s)/Single frequencies	Maximum power/field strength	Additional regulatory parameters Mitigation requirements	Other restrictions	Implementation deadline
Non-specific short-range devices (cont.)	868.7-869.2 MHz	25 mW e.r.p.	Duty cycle ¹⁵ : up to 0,1%	Video applications are excluded	[1 January 2007]
	869.4-869.65 MHz	500 mW e.r.p.	Duty cycle ¹⁵ : up to 10% Channel spacing: must be 25 kHz, except that the whole band may also be used as one single channel for high-speed data transmission	Video applications are excluded	[1 January 2007]
	869.7-870 MHz	5 mW e.r.p.	Voice applications allowed with advanced mitigation techniques	Audio and video applications are excluded	[1 January 2007]
	2400-2483.5 MHz	10 mW equivalent isotropic radiated power (e.i.r.p.)			[1 January 2007]
	5725-5875 MHz	25 mW e.i.r.p.			[1 January 2007]

¹⁵ See footnote 14.

Type of short-range device	Frequency band(s)/Single frequencies	Maximum power/field strength	Additional regulatory parameters Mitigation requirements	Other restrictions	Implementation deadline
Alarm systems	868.6-868.7 MHz	10 mW e.r.p.	Channel spacing: 25 kHz The whole frequency band may also be used as one single channel for high-speed data transmission Duty cycle ¹⁶ : up to 0,1%		[1 January 2007]
	869.25-869.3 MHz	10 mW e.r.p.	Channel spacing: 25 kHz Duty cycle ¹⁶ : below 0,1%		[1 January 2007]
	869.65-869.7 MHz	25 mW e.r.p.	Channel spacing: 25 kHz Duty cycle ¹⁶ : below 10%		[1 January 2007]
Social alarms ¹⁷	869.20-869.25 MHz	10 mW e.r.p.	Channel spacing: 25 kHz Duty cycle ¹⁶ : below 0,1%		[1 January 2007]

¹⁶ See footnote 14.

¹⁷ Social alarm devices are used to assist elderly or disabled people living at home when they are in distress.

Type of short-range device	Frequency band(s)/Single frequencies	Maximum power/field strength	Additional regulatory parameters Mitigation requirements	Other restrictions	Implementation deadline
Inductive applications ¹⁸	20.05–59.75 kHz	72 dB μ A/m at 10 meters			[1 January 2007]
	59.75–60.25 kHz	42 dB μ A/m at 10 meters			[1 January 2007]
	60.25–70 kHz	69 dB μ A/m at 10 meters			[1 January 2007]
	70–119 kHz	42 dB μ A/m at 10 meters			[1 January 2007]
	119–127 kHz	66 dB μ A/m at 10 meters			[1 January 2007]
	127–135 kHz	42 dB μ A/m at 10 meters			[1 January 2007]
	6765-6795 kHz	42 dB μ A/m at 10 meters			[1 January 2007]

¹⁸ This category covers, for example, devices for car immobilisation, animal identification, alarm systems, cable detection, waste management, personal identification, wireless voice links, access control, proximity sensors, anti-theft systems including RF anti-theft induction systems, data transfer to handheld devices, automatic article identification, wireless control systems and automatic road tolling.

Type of short-range device	Frequency band(s)/Single frequencies	Maximum power/field strength	Additional regulatory parameters Mitigation requirements	Other restrictions	Implementation deadline
	13.553-13.567 MHz	42 dB μ A/m at 10 meters			[1 January 2007]
Active medical implants ¹⁹	402-405 MHz	25 μ W e.r.p.	Channel spacing: 25 kHz Other channelling restriction: individual transmitters may combine adjacent channels for increased bandwidth with advanced mitigation techniques.		[1 January 2007]
Wireless audio applications ²⁰	863-865 MHz	10 mW e.r.p.			[1 January 2007]

¹⁹ This category covers the radio part of active implantable medical devices, as defined in Council Directive 90/385/EEC of 20 June 1990 on the approximation of the laws of the Member States relating to active implantable medical devices and their peripherals.

²⁰ Applications for wireless audio systems, including: cordless loudspeakers; cordless headphones; cordless headphones for portable use, for example portable CD, cassette or radio devices carried on a person; cordless headphones for use in a vehicle, for example for use with a radio or mobile telephone, etc.; in-ear monitoring, for use with concerts or other stage productions.

Annex 5

Responding to this consultation

How to respond

- A5.1 Ofcom invites written views and comments on the issues raised in this document, to be made **by 5pm on 22 September 2006**.
- A5.2 Ofcom strongly prefers to receive responses using the online web form at <http://www.ofcom.org.uk/consult/condocs/wtexemption/howtorespond/form>, as this helps us to process the responses quickly and efficiently. We would also be grateful if you could assist us by completing a response cover sheet (see Annex 7), to indicate whether or not there are confidentiality issues. This response coversheet is incorporated into the online web form questionnaire.
- A5.3 For larger consultation responses - particularly those with supporting charts, tables or other data - please email paul.chapman@ofcom.org.uk attaching your response in Microsoft Word format, together with a consultation response coversheet.
- A5.4 Responses may alternatively be posted or faxed to the address below, marked with the title of the consultation.
- Paul Chapman
Floor 3
Dept SPG
Riverside House
2A Southwark Bridge Road
London SE1 9HA
- Fax: 020 7981 3921
- A5.5 Note that we do not need a hard copy in addition to an electronic version. Ofcom will acknowledge receipt of responses if they are submitted using the online web form but not otherwise.
- A5.6 It would be helpful if your response could include direct answers to the questions asked in this document, which are listed together at Annex 1. It would also help if you can explain why you hold your views.

Further information

- A5.7 If you want to discuss the issues and questions raised in this consultation, or need advice on the appropriate form of response, please contact Paul Chapman on 020 7981 3069.

Confidentiality

- A5.8 We believe it is important for everyone interested in an issue to see the views expressed by consultation respondents. We will therefore usually publish all responses on our website, www.ofcom.org.uk, ideally on receipt (when respondents confirm on their response coversheet that this is acceptable).

- A5.9 All comments will be treated as non-confidential unless respondents specify that part or all of the response is confidential and should not be disclosed. Please place any confidential parts of a response in a separate annex so that non-confidential parts may be published along with the respondent's identity.
- A5.10 Ofcom reserves its power to disclose any information it receives where this is required to facilitate the carrying out of its statutory functions.
- A5.11 Please also note that copyright and all other intellectual property in responses will be assumed to be licensed to Ofcom to use in order to meet its legal requirements. Ofcom's approach on intellectual property rights is explained further on its website at <http://www.ofcom.org.uk/about/accoun/disclaimer/>

Next steps

- A5.12 Following the end of the consultation period, Ofcom intends to publish a statement in October 2006.
- A5.13 Please note that you can register to receive free mail Updates alerting you to the publications of relevant Ofcom documents. For more details please see: http://www.ofcom.org.uk/static/subscribe/select_list.htm

Ofcom's consultation processes

- A5.14 Ofcom seeks to ensure that responding to a consultation is as easy as possible. For more information please see our consultation principles in Annex 6.
- A5.15 If you have any comments or suggestions on how Ofcom conducts its consultations, please call our consultation helpdesk on 020 7981 3003 or e-mail us at consult@ofcom.org.uk . We would particularly welcome thoughts on how Ofcom could more effectively seek the views of those groups or individuals, such as small businesses or particular types of residential consumers, who are less likely to give their opinions through a formal consultation.
- A5.16 If you would like to discuss these issues or Ofcom's consultation processes more generally you can alternatively contact Vicki Nash, Director Scotland, who is Ofcom's consultation champion:

Vicki Nash
Ofcom
Sutherland House
149 St. Vincent Street
Glasgow G2 5NW

Tel: 0141 229 7401
Fax: 0141 229 7433

Email vicki.nash@ofcom.org.uk

Annex 6

Ofcom's consultation principles

A6.1 Ofcom has published the following seven principles that it will follow for each public written consultation:

Before the consultation

A6.2 Where possible, we will hold informal talks with people and organisations before announcing a big consultation to find out whether we are thinking in the right direction. If we do not have enough time to do this, we will hold an open meeting to explain our proposals shortly after announcing the consultation.

During the consultation

A6.3 We will be clear about who we are consulting, why, on what questions and for how long.

A6.4 We will make the consultation document as short and simple as possible with a summary of no more than two pages. We will try to make it as easy as possible to give us a written response. If the consultation is complicated, we may provide a shortened version for smaller organisations or individuals who would otherwise not be able to spare the time to share their views.

A6.5 We will normally allow ten weeks for responses to consultations on issues of general interest.

A6.6 There will be a person within Ofcom who will be in charge of making sure we follow our own guidelines and reach out to the largest number of people and organizations interested in the outcome of our decisions. This individual (who we call the consultation champion) will also be the main person to contact with views on the way we run our consultations.

A6.7 If we are not able to follow one of these principles, we will explain why. This may be because a particular issue is urgent. If we need to reduce the amount of time we have set aside for a consultation, we will let those concerned know beforehand that this is a 'red flag consultation' which needs their urgent attention.

After the consultation

A6.8 We will look at each response carefully and with an open mind. We will give reasons for our decisions and will give an account of how the views of those concerned helped shape those decisions.

Annex 7

Consultation response cover sheet

- A7.1 In the interests of transparency, we will publish all consultation responses in full on our website, www.ofcom.org.uk, unless a respondent specifies that all or part of their response is confidential. We will also refer to the contents of a response when explaining our decision, without disclosing the specific information that you wish to remain confidential.
- A7.2 We have produced a coversheet for responses (see below) and would be very grateful if you could send one with your response (this is incorporated into the online web form if you respond in this way). This will speed up our processing of responses, and help to maintain confidentiality by allowing you to state very clearly what you don't want to be published. We will keep your completed coversheets confidential.
- A7.3 The quality of consultation can be enhanced by publishing responses before the consultation period closes. In particular, this can help those individuals and organisations with limited resources or familiarity with the issues to respond in a more informed way. Therefore Ofcom would encourage respondents to complete their coversheet in a way that allows Ofcom to publish their responses upon receipt, rather than waiting until the consultation period has ended.
- A7.4 We strongly prefer to receive responses via the online web form which incorporates the coversheet. If you are responding via email, post or fax you can download an electronic copy of this coversheet in Word or RTF format from the 'Consultations' section of our website at www.ofcom.org.uk/consult/.
- A7.5 Please put any confidential parts of your response in a separate annex to your response, so that they are clearly identified. This can include information such as your personal background and experience. If you want your name, address, other contact details, or job title to remain confidential, please provide them in your coversheet only so that we don't have to edit your response.

Cover sheet for response to an Ofcom consultation

BASIC DETAILS

Consultation title:

To (Ofcom contact):

Name of respondent:

Representing (self or organisation/s):

Address (if not received by email):

CONFIDENTIALITY

What do you want Ofcom to keep confidential?

Nothing	<input type="checkbox"/>	Name/contact details/job title	<input type="checkbox"/>
Whole response	<input type="checkbox"/>	Organisation	<input type="checkbox"/>
Part of the response	<input type="checkbox"/>	If there is no separate annex, which parts?	

DECLARATION

I confirm that the correspondence supplied with this cover sheet is a formal consultation response. It can be published in full on Ofcom's website, unless otherwise specified on this cover sheet, and I authorise Ofcom to make use of the information in this response to meet its legal requirements. If I have sent my response by email, Ofcom can disregard any standard e-mail text about not disclosing email contents and attachments.

Ofcom seeks to publish responses on receipt. If your response is non-confidential (in whole or in part), and you would prefer us to publish your response only once the consultation has ended, please tick here.

Name

Signed (if hard copy)