OFFICE OF COMMUNICATIONS

Notice of Ofcom's Proposal to Amend the Wireless Telegraphy (Exemption) Regulations 2003

Statutory Consultation

Publication date: 5 October 2006

Closing Date for Responses: 6 November 2006

Contents

Section 1

Executive Summary

Introduction

1.1 In accordance with the requirements of section 403(4) and (5) of the Communications Act 2003 ("the Act") this document gives notice of Ofcom's intention to amend the Wireless Telegraphy (Exemption) Regulations (2003) through the creation of new Regulations, the Wireless Telegraphy (Exemption)(Amendment) Regulations 2006 ("the Amendment Regulations").

1.2 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.

1.3 In a consultation which was published on 14 July and closed on 22 September 2006 Ofcom described a number of proposals for licence exemption to which it received 67 non-confidential responses. These are listed in Annex 3 and are published on Ofcom's website at http://www.ofcom.org.uk/consult/condocs/wtexemption/responses/. In addition Ofcom received two confidential responses to the proposals.

1.4 Of these 69 responses, in the case of each exemption proposal, the large majority of respondents either supported or voiced no objections to Ofcom's plans. Ofcom has however, given consideration to those objections which were raised and these are addressed in Section 2 of this document. This consideration has not caused Ofcom to amend its proposals and subsequently this document gives notice of Ofcom's intention to implement the proposals as originally.

1.5 Exemption is realised by describing the details of equipment and the parameters under which it may be used in Regulations which exempt users of such equipment from the need to hold a WT Licence provided they comply with the terms of the Regulations. There are a number of reasons for the current exemption proposals:

- 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. This 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 Community legislation – usually in the form of European Commission 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 Commission Decisions,

and also some voluntary harmonisation measures designed to support the single market.

1.6 Draft Regulations – the Wireless Telegraphy (Exemption)(Amendment) Regulations 2006 – are included in this document at Annex 1. Further hard copies of these Regulations are available from Ofcom at 2a Southwark Bridge Road, London SE1 9HA from the contact specified in Annex 4 for responding to this Notice. Comments on the draft are invited by 6 November 2006. Subject to consideration of responses Ofcom intends to bring the new Regulations into force in early December 2006.

1.7 Section 3 of this document sets out the extent of application, scope and intended effect of the Regulations

1.8 A Regulatory Impact Assessment (RIA) for the Regulations is available at Annex 2 to this document. The RIA sets out the risks, costs and benefits of Ofcom's decision and the effects that these will have on the costs to business.

Overview of Proposed Changes

1.9 The changes to be implemented are as follows:

- Citizens' Band (CB) radio – measures to remove the need for users of CB radio, of which there are currently 20,000, 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 proposes to permit the use of these devices on a licence-exempt basis;
- a range of new technologies and novel applications of radio where users will not need to obtain a licence from Ofcom:
  - Inmarsat BGAN and High Density Fixed Satellite Service (HDFSS) satellite terminals;
  - narrow band use of 24 GHz for short-range radar (including automotive applications);
  - Radar Level Gauges; and
  - digital PMR 446 ("walkie talkies");
- the implementation of the following Commission Decisions:
  - *the draft Decision establishing a framework for the harmonisation of radio spectrum for use by short-range devices in the Community.* It is our expectation that the Commission will imminently adopt this Decision, and whilst arrangements in the UK are already largely compliant with it we intend to implement 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; and

  - *Commission Decision 2005/513/EC 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).* Although existing arrangements are believed to be fully compliant we will make 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; and

- editorial and minor changes designed to improve the clarity of current exemption arrangements and bring them fully up to date.

Section 2

Introduction

2.1 In accordance with the requirements of section 403(4) and (5) of the Communications Act 2003 ("the Act") this document gives notice of Ofcom's intention to amend the Wireless Telegraphy (Exemption) Regulations (2003) through the creation of new Regulations, the Wireless Telegraphy (Exemption)(Amendment) Regulations 2006 ("the Amendment Regulations").

2.2 Respondents to this Notice should note that the amendments proposed to the Wireless Telegraphy (Exemption) Regulations 2003 by the Amendment Regulations do not include amendments in relation to GSM Gateways. Ofcom undertook a consultation on the future regulation of GSM gateways under the Wireless Telegraphy Act in the second half of 2005, but then decided to stay consideration of the matter whilst the Competition Appeal Tribunal considered an appeal by Floe Telecom Limited (in administration) against a decision by Ofcom under the Competition Act 1998. The Competition Appeal Tribunal has recently handed down its judgement in this case (available at http://www.catribunal.org.uk/judgments/default.asp). Ofcom is now reviewing the judgement, and considering its implications for our future policy on the regulation of GSM gateways under the Wireless Telegraphy Act. A further announcement will be made in due course.

Background

The need to regulate the radio spectrum

2.3 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.

2.4 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 carefully 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 granted by Ofcom in the form of a licence issued under section 1(1) of the 1949 Act. 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 Regulations made under the 1949 Act.

What is licence exemption?

2.5 Every day, most of us use radio devices that do not need a licence as they have 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 data links to remote base stations.

2.6 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. (For this reason, 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

2.7 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 1949 Act, the use of 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 Regulations which exempt users of such equipment from the need to hold a WT licence provided they comply with the terms of those Regulations.

2.8 In accordance with the 2003 Act 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 legislation – usually in the form of European Commission Decisions – relating to radio spectrum and from time to time this requires licence exemption arrangements to be changed.

2.9 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).

2.10 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.

2.11 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.

Ofcom's Consultation

2.12 Ofcom consulted on proposals 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.

2.13 The changes fall into three 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:
  - CB radio;
  - FM transmitters;
  - Inmarsat BGAN and HDFSS satellite terminals;
  - narrow band use of 24 GHz for short-range radar (including automotive applications);
  - Radar Level Gauges; and
  - 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 Commission Decisions; or
  - to harmonise with Europe where such measures are viewed as beneficial; and
- 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.

2.14 For the full rationale for each of the new exemption propositions please see the consultation document published on the Ofcom website at http://www.ofcom.org.uk/consult/condocs/wtexemption/

Responses to the Consultation

2.15 Ofcom received 69 responses to the consultation of which two were confidential. The remaining 67 are listed in Annex 3 of this document and published on the Ofcom website at http://www.ofcom.org.uk/consult/condocs/wtexemption/responses/. The large majority of respondents either supported or did not oppose Ofcom's proposals.

A summary of the responses and Ofcom's comments on these follow under the headings of the questions posed in the consultation.

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

2.16 There was strong support for this proposal. A few respondents felt that there may be merit in a life-time licensing system of some form. Reasons included the ability to track users with call signs and issues of enforcement against those who might not operate in accordance with the exemption Regulations. As stated in section 3 of the consultation document Ofcom believes that there are wider benefits to be gained from exemption in terms of the significantly reduced regulatory burden on users. Ofcom is sensitive to concerns around inappropriate use of equipment and will investigate and take enforcement action against those not operating in accordance with the terms of the exemption regulations.

2.17 One respondent suggested the removal of the specific constraints imposed by reference to document RA369. Whilst these were appropriate for a licence regime, we confirm that under the exemption regime such restrictions will no longer be required and the reference to RA 369 will be removed.

2.18 A couple of respondents asked whether we would consider relaxing the technical constraints on equipment operating under the exemption to allow single sideband equipment, higher power and additional spectrum. The use of single sideband equipment is forbidden in the UK and constitutes an offence under the 1949 Act because of the high risk of interference this represents to other users of the radio spectrum. Ofcom has no plans to relax this restriction and will continue to enforce rigorously against those who use such equipment. Ofcom does not intend to make any change in the spectrum allocations for CB nor raise output power.

2.19 A few respondents questioned the use of CB equipment for Community Audio Distribution (CADS). The main reason was the potential disruption to CB users. On the basis of the findings from technical trials, Ofcom believes that CADS and CB radio users should be able to co-exist successfully in the relevant spectrum bands. Therefore, Ofcom plans to implement a permanent scheme for CADS as soon as is practicable. It should be noted that frequencies in the CB band are for shared usage and users do not enjoy exclusive rights to any particular frequency. As with general operation of shared use channels, operators are expected not to interfere with channels already in use at any given time. In line with its duties Ofcom will monitor activities in this area to ensure that the new regime is operating effectively and review as appropriate.

2.20 A further response expressed concern over the use of CADS for broadcasting religious messages. Whilst Ofcom recognises that CADS have predominantly been used by religious bodies it has never limited this opportunity to religious groups. Indeed, the recent Policy Statement on CADS included a definition of CADS which suggests that these services should be available for the purpose of the live onward transmission of a community event only (for example, an act of worship, a council meeting, a community play or a call to prayer). As set out in section 3 of the consultation document, the long term authorisation of CADS requires an exemption from the need to hold a Broadcasting Act (BA) licence. Ofcom believes that the complete definition outlined above would form a suitable basis for a Statutory Instrument making this type of service exempt from the need to hold a BA licence. It

should be noted that the proposed definition is a recommendation to the Secretary of State for Culture, Media and Sport only. The exact nature of BA licence-exempt CADS services will be determined by a Statutory Instrument on which there will be a consultation.

2.21 One respondent questioned the impact of the change in the solar sunspot cycle on propagation and degradation for service due to high power CB users and adjacent band protection for the amateur 10m band. Ofcom notes that anomalous propagation conditions and changes in the solar sunspot cycle can cause degradation in the use of the CB service. However, high power illegal use whether from Italy or elsewhere, should be subject to enforcement action. Ofcom is not proposing any changes to existing power levels. For the same reason, CB transmitters should not exacerbate interference to the adjacent 10 m Amateur band.

"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?"

2.22 This proposal received the greatest support from respondents. Of the objections registered a small number of respondents questioned the power level set in Ofcom's proposal either because they thought it was too high and would therefore cause interference to other broadcast reception, or because they thought the power would be too low for the equipment to operate effectively. Ofcom was keen to ensure that the right balance was struck in its proposal and played an active role within Europe in defining appropriate technical restrictions on this equipment to ensure that the risk of interference to broadcast equipment was minimised whilst ensuring the equipment could operate effectively. We believe the proposed technical restrictions including those specified for maximum power achieve this balance.

2.23 One respondent suggested that Ofcom should make spectrum exclusively available for FM transmitters. Conversely some respondents welcomed Ofcom's proposals to permit operation of these devices across the whole of the FM broadcast radio band (87.5-108 MHz). Due to the demand for broadcast radio services, both in the UK and across Europe, it is not possible to set aside spectrum exclusively for this use. One of the attractions of these devices is their ability to exploit spectrum which is not in use in a particular area to provide a link to domestic radio equipment, so maximising the benefit of the spectrum.

2.24 A respondent highlighted the suitability of this technology for a wide range of applications including allowing personal computers to connect to domestic radio receivers enabling radio to be played and allowing digital radio content to be re-transmitted through existing analogue home stereo equipment. Ofcom sees this diversity of use as an exciting opportunity and would like to clarify that nothing in the proposed Regulations will prevent the FM transmitter equipment from being used in such a way.

2.25 A couple of respondents raised concerns as to the ability of Ofcom to enforce the new Regulations and what resources would be available to resolve interference should it arise. Ofcom remains committed to taking enforcement action against the sale and use of illegal equipment. We believe that the authorisation of the use of the equipment proposed will reduce the market for illegal equipment and allow Ofcom to focus on that equipment which remains illegal and constitutes the greater interference risk.

"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?"

2.26 Only two respondents objected to this proposal but they did not explain their reasons. In line with the rationale set out in section 5 of the consultation document, Ofcom continues to assert that when operating in accordance with the specified technical parameters use of the HDFSS equipment in the identified bands is unlikely to cause interference to other users of the radio spectrum.

"Do you agree with Ofcom's proposals to exempt users of Inmarsat GAN terminals from the need to possess a Wireless Telegraphy Licence?"

2.27 There were no objections to this proposal although one respondent proposed that the Regulations should be neutral rather than refer to the brand names of equipment. It was felt that a more generic description of the equipment would allow for the evolution of terminals without the associated need to update Regulations. Ofcom believes that there could be merit in this proposal and intends to include it in a review of the approach to Exemption regulations planned for the New Year. In the meantime because the existing proposal has already been through the consultation process and the associated Interface Requirement has been notified to the European Commission, Ofcom proposes to make regulations on the basis originally described. This is because a change at this stage would require further examination and consultation which would delay the immediate benefits of licence exemption to users.

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

2.28 Again the majority of respondents welcomed this proposal. A couple raised concerns about the potential impact on the amateur radio allocation. Compatibility studies carried out within Europe between automotive short-range radar and other uses of the band rated the probability of interference as low. Ofcom remains committed to investigating any instances of interference caused to radio amateurs as well as other legitimate users of the radio spectrum. This proposal is for a UK authorisation within the permanent CEPT allocation for narrow band radar and should not be confused with the interim arrangements for the different technology that is the wideband short-range radar authorised separately.

2.29 One respondent questioned the suitability of exemption for non-consumer applications of the technology. In accordance with the 2003 Act 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. In considering this equipment use for exemption we feel that there is no justification for distinguishing between public and commercial use and that all types of use should therefore be covered.

2.30 One respondent sought clarification as to whether permanent fixed radar applications were permissible under Ofcom's proposals in the newly extended band. Ofcom confirms that such applications are permitted provided the equipment operates in accordance with the technical restrictions as defined in Interface Requirement 2030 table 2.9. Clarification was also sought as to the relationship between these proposals and those for automotive radar as defined in Commission Decision 2005/50/EC. This Decision was implemented separately in the UK through the

Wireless Telegraphy (Automotive Short Range Radar) (Exemption) (No.2) Regulations 2005 (the "Regulations") and deals specifically with Ultra Wide Band technology although the allocation for this and the new proposals overlap.

2.31 One respondent proposed to change the term of "Minimum sweep rate 2 MHz/ms" to "Minimum carrier frequency change rate 2MHz/ms". The authorisation in the lower 100 MHz (24.05 to 24.15 GHz) is subject to agreements made with the primary users of the frequency band. Ofcom will need to carefully evaluate this helpful suggestion with the primary user of the band. Unfortunately Ofcom cannot amend the regulations until a full analysis has been completed.

"Do you agree with Ofcom's proposals to make available the frequency band 2.4 – 2.4835 GHz for movement detection systems?"

2.32 A couple of respondents disagreed with this proposal without giving reasons. Further objection was raised based on potential interference to Amateur radio use. The 2.4 GHz band is allocated internationally, within ITU Radio Regulation 5.150 as an Industrial Scientific and Medical (ISM) band. Radio Regulation 5.150 states that Radiocommunications services operating in ISM bands must accept harmful interference from ISM equipment. In these circumstances, Ofcom cannot give the protection from interference that some [amateur] Radiocommunications services may desire, especially from SRDs that are allocated on the basis that they are unlikely to themselves to cause interference to other Radiocommunication systems.

2.33 One respondent felt that the 2.4GHz band is already crowded, where another respondent felt that the higher power authorization currently open only to RLAN apparatus (100 mW) should be available to all types of apparatus covered by the generic SRD ETSI Standard (EN 300 440). Ofcom believes that multiple uses can be accommodated, by authorising the use of any Wideband Data Transmission System (WBDTS) apparatus, whilst limiting the types of modulation.

"Do you agree with Ofcom's proposals to remove the need for users of most radar level gauge equipment to possess a Wireless Telegraphy Licence?"

2.34 There were no objections to this proposal although one respondent was keen to ensure that use continues to be indoor. Ofcom can confirm that the technical conditions of exemption are the same as they were for licensed use ie within a contained environment.

"Do you agree with Ofcom's proposals to exempt users of digital PMR 446 from the need to possess a Wireless Telegraphy Licence?"

2.35 A couple of respondents questioned the detail of this proposal rather than the move to de-regulate. In particular the proposed band plan which features two channel rasters was questioned on the basis of an increased risk of interference. The probability of interference between the two technologies with channel spacings 6.25 kHz and 12.5 kHz was heavily debated within the European Telecommunications Standards Institute (ETSI) in 2005 and also within various CEPT Working Groups, notably the Working Group on Frequency Management (WGFM) and its project team (WGFM PT38).

2.36 The ETSI members (which consisted of a consortium of manufacturers who developed the ETSI standard for digital PMR 446) addressed this issue through liaison statements to WGFM and concluded that having two technologies with

channel spacings 6.25 kHz and 12.5 kHz would not create intersystem compatibility problems as the centre frequencies for both technologies are 3.125 kHz apart. The 3.125 kHz offset between the two standard technologies increases the protection distance when two radios are operating in close proximity to each other. Therefore ETSI rejected the need for compatibility studies to be conducted.

2.37 Accordingly, WGFM and WGFM PT38 accepted strong industry advice from ETSI that there would be no intersystem compatibility problems between the two technologies. Ofcom will proceed with the proposed band plan for digital PMR 446 developed by ETSI and accepted by WGFM, using a 12.5 kHz bandwidth according to ETSI Technical Reports (TR) 102 335-1 V1.1.2 (2004-10) and a 6.25 kHz bandwidth according to ETSI TR 102 433. Equipment is already being produced by manufacturers according to the proposed band plan.

2.38 The use of an integral antenna only is in line with the ECC Decision (05)12 (on harmonised frequencies, technical characteristics, exemption from individual licensing and free carriage and use of digital PMR 446 applications operating in the frequency band 446.1-446.2 MHz) and must be incorporated in order for the equipment to meet the technical conditions for licence exemption.

2.39 Ofcom recognises that there are licensed users within this frequency range that will be sharing with proposed digital PMR 446 users who have the frequency capacity to switch to another channel if interference occurs.

2.40 In the unlikely event that any intolerable interference issues arise to the licensed users, Ofcom will investigate the source of these on a case by case basis. However, if existing licensees wish to have an alternative assignment outside of the 446.1-446.2 MHz frequency range, we will seek to offer them an alternative assignment.

2.41 In common with other licence exempt use, users of digital PMR 446 will not be offered protection from interference which may be caused in areas where there are existing licensed systems.

2.42 One respondent stated that amateurs are not allowed to digitise their verbal radio systems and asked for this facility. Ofcom does permit amateur radio licensees to digitise messages but enciphering or encrypting for the purpose of obscuring or rendering the message unintelligible is not permitted.

2.43 Ofcom has considered the suggestion from one respondent that it might be appropriate to include the apparatus being connected to the internet or to further repeater apparatus. However no detailed evidence was provided as to how this might impact on all users and Ofcom's reaction is that PMR 446 (as currently standardised across Europe) is designed to operate in a free standing mode, without any modifications. That mode prevents interference between the large numbers of consumers who have easy access to, and use of, this type of equipment and which also has a relatively narrow range of available frequencies. Ofcom think it probable that any change in the mode of use would be significant in changing and extending transmission patterns and therefore be likely to cause increased interference that could significantly impact on large numbers of other users.

"Ofcom would welcome comments on its proposals to implement changes concerning short range devices"

2.44 One respondent raised an objection to the low power inductive devices proposed in the band utilised for Long Wave and Medium Wave broadcast transmissions. Ofcom considers that interference is unlikely to occur to Broadcast reception, as transmissions from the SRD are limited to closed loop type magnetic field.

2.45 One respondent pointed out that it is not clear from our present note (g) to table 2.1 of Interface Requirement 2030 (detailing technical parameters for short-range devices), and other similar notes in other tables within IR2030 what is the correct value for the duty cycle when channels are combined to make a larger channel. Ofcom confirms that the duty cycle remains the same value under all circumstances. Consequently for the avoidance of doubt, Ofcom will add to all relevant notes in IR2030, "Where a duty cycle limit is applied, that duty cycle limit remains in force where channels are combined".

2.46 One respondent felt that the term "short range" required further definition citing CB characteristics as enabling communication over far greater distance than for example FM transmitters. Short range devices are typically limited in power to a few milliWatts and their technical parameters are set out in one interface requirement IR 2030.

2.47 One respondent was concerned that the word Wideband from WBDTS may be confused with UWB. WBDTS is the European wide recognised description of this technology. Ofcom does not believe the two terms are confusing and has no plans to ask the ERO to amend. The same respondent requested that power levels above 100 mW be not allowed in the 2.4 GHz ISM band. Ofcom is not proposing a level at above 100 mW for this authorisation. The same respondent requested lower Out of Band (OOB) emissions for the currently authorised radar in the 76 – 77 GHz band. OOB are specified in the ETSI standard for this apparatus. Amendment of the Standard is a matter for ETSI and is not considered in this particular consultation.

"Ofcom would welcome comments on its proposals to implement Commission Decision 2005/928/EC"

2.48 One respondent felt that the power limit and channel bandwidth should be increased in order to affect any additional benefit to users in the 173.7-174 MHz band. Additionally clarification was sought as to the technical specification for meter reading in the 169.400-169.475 MHz band. As set out in section 10 of the consultation work is still underway within CEPT to define appropriate parameters for meter reading and asset tracking applications. 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 proposes 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 whilst minimising the risk of interference to other users of the spectrum. We recognise 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. Detailed equipment characteristics can be found in ETSI standard EN300 220.

"Ofcom would welcome comments on its proposals to implement Commission Decision 2005/513/EC"

2.49 One respondent suggested that "it remains unclear from the document why Ofcom simply assumes in the Impact Assessment that these proposals do not increase costs to businesses, without any accompanying assessment."

2.50 In section 11.6 of the consultation we noted that "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." Consequently, if there is minimal risk of interference, there is minimal risk of increased costs to licence holders, both in band and in adjacent bands. Ofcom believes the IA represents the costs and benefits of this regulatory change.

2.51 The consultation further noted that the changes we are proposing are fully in line with the requirements of the Commission 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.

2.52 One respondent raised concerns over the removal of the Minimum Aggregate Bit Rate restriction for Wideband Data Transmission Systems, as this may allow spectrally inefficient apparatus to use the 2.4 GHz band and cause a reduction in overall data capacity. This proposal is intended to make the authorisation more Technology Neutral and allow innovative, but conforming, apparatus to be deployed. Ofcom notes that Article 3 of the R&TTE directive tells suppliers of equipment that the radio spectrum must be used efficiently. Therefore, the R&TTE Directive covers and prevents such an eventuality that the respondent is fearful of.

"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"

2.53 One respondent asked for clarification on the progress of other studies on licence exemption in bands above 30 GHz. Scientific study of these bands and appropriate allocation authorisations continue in both CEPT and Ofcom but are at any early stage.

2.54 One respondent called for more consultation and asked for a subscribe mechanism to provide alerts of Ofcom consultations. The principles upon which Ofcom consults are set out in Annex 5 of this document. Interested parties can already subscribe for email alerts to consultation publications; details are contained in Annex 4 paragraph 4.11 of this document.

2.55 One respondent commented that there are occasional reports of automotive central locking key fobs not working in the presence of high field strengths from nearby >430 MHz transmitters and requested that this be addressed. Consideration of suitable bands for SRDs at national and international levels takes account of the impact of higher power transmissions in adjacent bands to minimise the interference risk. In many cases such as this the receiver of the key fob transmitter is insufficiently selective to block out adjacent channel transmissions. However, this is as a consequence of the receiver performance rather than transmitter non-compliance or

high power. In these instances it is a matter for the receiver manufacturer to overcome.

Additional editorial amendments

2.56 A number of editorial changes were outlined in the consultation. In addition to these Ofcom proposes to make the following editorial amendments to Interface Requirement 2030 to reflect errors or omissions highlighted since the consultation period:

- Table 3.1 Note (e). Reference was made to "Tetra network". This has been changed to "licensed service" as the band previously allocated to Tetra now forms the basis of a spectrum award in the 412-414MHz/422-424 MHz bands. (for details of this award see www.ofcom.org.uk/radiocomms/spectrumawards/liveawards/award_412/notices

- Table 2.4 Capitalising a yes to Yes;

- Table 3.5 WBDTS amended to include "Frequency Hopping Spread Spectrum" in place of "Frequency hopping" and the inclusion of the Reference Standard EN 300 328;

- Table 3.10 RFID Notes (c,d &e) to change the centre frequency from 865.1 MHz to 864.9 MHz and Note (e) to change channel numbers (5 to 15) to channel numbers (4 to 15). Amend the Note to other tables in the IR from table 2.1, 2.2, 2.10 & 2.12 to the new table numbers of 3.1, 3.2 & 3.12;

- Table 3.12 Note (c) The addition of apparatus operating below 135 KHz that may operate to an equivalent e.r.p. to the stated magnetic field;

- Table 3.20 Remove the underline from 34.94 in note (b). This is a formatting error only;

- Table 3.23 Add the less than or equal to sign to Category (v) Channel Bandwidth, to indicate this is the maximum permissible bandwidth;

- Table 3.26 Amend note (c), 30_0 to 30^0 (thirty degrees) to correct formatting error. Change the word Maximum to the "less than or equal to" sign in both Radiated Level entries in the table;

- Table 3.28 Insert text to make it more clear that Radar Level Gauges operating in the 10.6 to 10.7 GHz band need to hold a WT Act licence and that the licence can be applied for from Ofcom. "Radar Level Gauges in the 10.6 - 10.7 GHz frequency band are not exempt from licensing. A licence application form can be obtained from the Ofcom website".

Section 3

General effect of the Wireless Telegraphy (Exemption)(Amendment) Regulations 2006

The Legislative Framework

3.1 Ofcom can exempt the establishment, installation and use of wireless telegraphy equipment by making Regulations under section 1(1) of the Wireless Telegraphy Act 1949. Ofcom proposes to implement the changes proposed in the recent consultation and summarised in this document by making the Wireless Telegraphy (Exemption)(Amendment) Regulations 2006 ("the Amendment Regulations") to amend the Wireless Telegraphy (Exemption) Regulations 2003 ("the Principal Regulations"). The proposed Amendment Regulations are included in Annex 1 of this document.

Extent of Application

3.2 The Amendment Regulations will apply in the United Kingdom, the Channel Islands and Isle of Man.

The Regulations

3.3 The Amendment Regulations do not themselves contain the specific technical characteristics of the equipment that will be licence exempt rather they refer in each case to the relevant Interface Requirement. Radio equipment must meet the UK Interface Requirements in order to be either licensed or exempted from licensing. Where appropriate Ofcom has updated the relevant Interface Requirements to reflect the changes proposed in the consultation and summarised section 2.13 of this document, and references to these Interface Requirements have been updated in the proposed Amendment Regulations.

3.4 Interface Requirements can be viewed on Ofcom's website at http://www.ofcom.org.uk/radiocomms/ifi/tech/interface_req/

New Exemptions introduced

3.5 A number of new exemptions have been proposed by Ofcom and these are to be implemented by the Amendment Regulations to make the following amendments to the principal Regulations:

- Citizens' Band Radio through the addition of Schedule 10;
- FM transmitters and Radar Level Gauges through the amendment of Schedule 6 which refers to Interface Requirement IR 2030. IR 2030 has been updated as detailed in the consultation to include the technical parameters permitted for these technologies;

- Inmarsat BGAN terminals through the amendment of Schedule 5 which updates the reference to Interface Requirement 2016 which has in turn been updated to reflect the technical parameters of these terminals;

- High Density Fixed Satellite Service Systems through the addition of Schedule 11;

- Digital PMR 446 through the amendment of Schedule 7 to update the reference to Interface Requirement 2009.

3.6 Additionally, the arrangements for licence exempt short range devices have been updated to ensure consistency with European harmonisation measures and Decisions as outlined in the consultation document. This is also to be implemented by the amendment to Schedule 6 to update the reference to Interface Requirement 2030, which has in turn been updated to include these requirements.

3.7 The amendment to Schedule 9 implements the changes proposed to ensure compliance with the European Commission Decision (2005/513/EC) on wireless access systems including radio local area networks.

3.8 The amendments of regulations 3,4 and 5,and Schedules 3, 4 and 8 are editorial updates only and minor drafting changes.

Annex 1

Draft Amendment Regulations

STATUTORY INSTRUMENTS

2006 No.

TELEGRAPHS

Wireless Telegraphy (Exemption)(Amendment) Regulations 2006

Made - - - - ***

Coming into force - - - -

The Office of Communications ("OFCOM") make the following Regulations in exercise of the powers conferred on OFCOM by section 1(1) of the Wireless Telegraphy Act 1949([1]) ("the 1949 Act").

Before making these Regulations OFCOM have given notice of their proposal to do so in accordance with section 403(4)(a) of the Communications Act 2003([2]) ("the 2003 Act") as applied by section 16(1A) of the 1949 Act, published notice of their proposal in accordance with section 403(4)(b) of the 2003 Act as applied by section 16(1A) of the 1949 Act and have considered the representations made to them before the time specified in that notice in accordance with section 403(4)(c) of the 2003 Act as applied by section 16(1A) of the 1949 Act.

Citation and commencement

1. These Regulations may be cited as the Wireless Telegraphy (Exemption)(Amendment) Regulations 2006 and shall come into force on [ ].

([1]) 1949 c..54. Section 1(1) was extended to the Channel Islands by S.I. 1952/1900, as amended by S.I. 1967/1279, S.I. 1974/691 and S.I. 1997/284 and to the Isle of Man by S.I. 1952/1899, as amended by S.I. 1967/1280 and S.I. 1997/285. Section 1(1) was amended by the Communications Act 2003 (c. 21), by section 406 and Schedule 17, paragraphs 6(1) and (2). These amendments were extended to Jersey by S.I. 2003/3197 article 6, to the Bailiwick of Guernsey by S.I. 2003/3195 article 6 and to the Isle of Man by S.I. 2003/3198 article 6. There are other amendments to section 1(1) not relevant to these Regulations.

([2]) 2003 c.21.

Amendment of the Wireless Telegraphy (Exemption) Regulations 2003

2. The Wireless Telegraphy (Exemption) Regulations 2003([3]) shall be amended in accordance with the following provisions of these Regulations.

Amendment of regulation 3

3. In regulation 3 (interpretation), in paragraph (1)—

(a) omit the entries that define "authorised person", "CEPT", "erp" and "RA";

(b) in the definition of "Interface Requirement", for "RA" substitute "OFCOM";

(c) in the definition of "the Radio Regulations", for "the 2001 edition" substitute "the 2004 edition";

(d) in the definition of "relevant apparatus", for "Schedules 3 to 9" substitute "Schedules 3 to 11".

Amendment of regulation 4

4. In regulation 4 (exemption), for paragraph (4) substitute the following paragraph—

"(4) The exemption provided in the case of relevant operating in the frequency bands specified in paragraph (3) shall not apply unless such apparatus complies with the appropriate following Interface Requirement—

(a) in the case of the frequency bands specified at sub-paragraph (a), IR 2005 – UK Radio Interface Requirement for Wideband Transmission Systems operating in the 2.4 GHz ISM Band and Using Wide Band Modulation Techniques, published by OFCOM in [ ];

(b) in the case of the frequency bands specified at sub-paragraphs (b) and (c), IR 2006 – UK Interface Requirement 2006 for Wireless Access Systems (WAS) including RLANs operating in the frequency range 5150 – 5725 MHz, published by OFCOM in [ ];

(c) in the case of the frequency band specified at sub-paragraph (d), IR 2000 – UK Interface Requirement 2000 for Point-to-Point Radio-Relay Systems Operating in Fixed Service Frequency Bands Administered by OFCOM, published by OFCOM in July 2005.".

Amendment of regulation 5

5. In regulation 5 (terms, provisions and limitations), in paragraph (1)(b), for "unless otherwise stated in Schedule 6" substitute "unless non-terrestrial use is permitted under Part III of Schedule 6".

Amendment of Schedule 3

6. In Schedule 3 (network user stations)—

(a) in Part III (type of licence granted under section 1(1) of the 1949 Act for the establishment and use of relevant networks), omit paragraph 5;

(b) for Part IV (interface requirement), substitute the following Part—

"PART IV

Interface Requirement

IR 2014 – Public Wireless Networks, published by OFCOM in August 2005.

IR 2017 – Remote Meter Reading Operator Services, published by OFCOM in October 2004.

IR 2019 – Third Generation Mobile, published by OFCOM in June 2005.

([3]) S.I. 2003/74, amended by S.I. 2003/2155 and S.I. 2005/3481.

IR 2044 – 12.5 kHz And 25 kHz Channel spacing for Land Mobile, Covering CBS, Analogue PAMR, National Paging, Data Networks, TETRA/TEDS Networks, and National & Regional PMBR Authorisations, published by OFCOM in [ ].".

Amendment of Schedule 4

7. In Schedule 4 (cordless telephone apparatus)—

(a) in Part I (interpretation) omit the entry that defines "data message";

(b) in Part III (interface requirement), for the entry relating to IR 2011 substitute the following entry—

"IR 2011 – UK Interface Requirement 2011 Analogue and digital cordless telephony service, published by OFCOM in June 2005.".

Amendment of Schedule 5

8. In Schedule 5 (land mobile-satellite service stations), in Part III (interface requirement) for the entry relating to IR 2016 substitute the following entry—

"IR 2016 – UK Radio Interface Requirement for Land Mobile Satellite Systems, published by OFCOM in April 2006.".

Amendment of Schedule 6

9. In Schedule 6 (short range devices), in Part III (interface requirement) for "published by RA in October 2002" substitute "published by OFCOM in [ ]".

Amendment of Schedule 7

10. In Schedule 7 (PMR 446), in Part III (interface requirement), for the entry relating to IR2009 substitute the following entry—

"IR 2009 – UK Radio Interface Requirement for Private mobile radio operating in the licence exempt analogue PMR446 and Digital PMR446 bands, published by OFCOM in [ ].".

Amendment of Schedule 8

11. In Schedule 8 (fixed terrestrial links apparatus in the 57.1 to 58.9 GHz frequency band), in Part III (interface requirement), for the entry relating to IR 2000 substitute the following entry—

"IR 2000 – UK Interface Requirement 2000 for Point-to-Point Radio-Relay Systems Operating in Fixed Service Frequency Bands Administered by OFCOM, published by OFCOM in July 2005.".

Amendment of Schedule 9

12.—4 For the heading to Schedule 9 substitute the heading "Wireless Access Systems including Radio Local Area Networks".

(1) In Part I (interpretation), for "radio local area network (RLAN) apparatus" substitute "apparatus providing wireless access systems including radio local area networks".

(2) In Part III (interface requirement), for the entries relating to IR 2005 and IR 2006 substitute the following entries—

"IR 2005 - UK Interface Requirement for Wideband Transmission Systems operating in the 2400 – 2483.5 MHz Band, published by OFCOM in [ ].

IR 2006 - UK Interface Requirement 2006 for Wireless Access Systems (WAS) including RLANs operating in the frequency range 5150 – 5725 MHz, published by OFCOM in [ ].".

Addition of Schedules 10 and 11

13. After Schedule 9 (Wireless Access Systems involving Radio Local Area Networks) add the following Schedules—

“

SCHEDULE 10 Regulation 3(1)

CITIZENS’ BAND RADIO EQUIPMENT

PART I

Interpretation

In this Schedule “prescribed apparatus” means apparatus described in the Interface Requirement referred to in Part III of this Schedule.

PART II

Additional Terms, Provisions and Limitations

The prescribed apparatus shall be subject to and comply with the Interface Requirement referred to in Part III of this Schedule.

PART III

Interface Requirement

UK Radio Interface Requirement 2027 – UK Radio Interface Requirement 2027 for Citizens’ Band (CB) radio for use in the Citizens’ Band Radio Service, published by OFCOM in [ ].

SCHEDULE 11 Regulation 3(1)

HIGH DENSITY FIXED SATELLITE SERVICE SYSTEMS

PART I

Interpretation

In this Schedule, “prescribed apparatus” means a station or apparatus described in the Interface Requirement referred to in Part III of this Schedule.

PART II

Additional Terms, Provisions and Limitations

The prescribed apparatus shall be subject to and comply with the Interface Requirement referred to in Part III of this Schedule.

PART III

Interface Requirement

IR 2066 – High Density Fixed Satellite Service Systems.”.

Chief Executive of the Office of Communications
Date For and by authority of the Office of Communications

EXPLANATORY NOTE

(This note is not part of the Regulations)

Annex 2

Regulatory Impact Assessment

Introduction

A2.1 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.

A2.2 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 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

A2.4 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

A2.5 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

A2.6 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

A2.7 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.

A2.8 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

A2.9 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

Allocation decision

A2.10 In relation to the proposals outlined in this document, the first of these options has been discounted because in the case of each exemption proposal, 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 proposed for exemption would also stifle the development of innovative radio spectrum applications with the subsequent loss of benefits to UK citizens and the UK economy.

Licence or licence Exempt

A2.11 The licensing option 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

A2.12 Licence exemption is therefore proposed because the analysis of the equipment proposed for exemption 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.

The benefits and costs of authorising use through licence exemption versus licensing are considered below on the basis that the potential for interference is very small.

Benchmarking benefits and costs

A2.13 To assess the preferred option we have compared the additional costs and benefits of a licence exempt regime against the baseline where each service is subject to a licence application procedure. For some services such as CB radios this comparison is relatively simple because there is an existing licensing regime in place against which to compare an exemption regime. For other services there is

currently no provision for licence exemption hence these services would be subject to licensing requirements under the 1949 Act.

A2.14 Therefore, to enable comparison of a licence exempt against a licensing regime, it is necessary to make assumptions about the licensing regime where this is adopted as the alternative to licence exemption. We have based our assumption on the fact that the types of services which are typically made licence exempt would, under a licensing regime, be issued with an "off the shelf licence". This type of licence generally requires no specific assignment coordination and attracts a relatively low fee. For the purposes of this RIA the fee rate used for analysis is £50 for five years based upon current fee trends for off the shelf licences.

Costs to business

A2.15 Licence exemption represents the least cost regulatory approach to the authorisation of spectrum use. If use of spectrum is authorised through a WT licence, businesses will face a direct cost in terms of the cost of acquiring a licence. This could be equal to the businesses own administrative costs associated with applying for the licence and compliance with the terms and conditions of that licence.

A2.16 If the licence is awarded by means of an auction the licensee will bear the costs of participating in the auction, including the cost of management time.

A2.17 Clearly this burden will be avoided if use of spectrum is made exempt from licensing, which could save each business user depending on the type of licence and method by which it is awarded. In estimating the costs associated with applying for a licence we have assumed the same cost as indicated above in terms of the cost to Ofcom of processing a licence application.

A2.18 One cost to business that is not included as a benefit of the licence exempt regime is the direct cost of any licence application fee. This is because we seek to identify below the benefits associated with reduced administrative costs to Ofcom. If we also included savings to business in not having to pay Ofcom's admin fees then this would double count the benefit. Nevertheless, the licence fee may be relevant for the assessment of service take-up if it represents a large proportion of the overall value of the service in question

Costs to Ofcom

A2.19 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 of licence exemption. There may be a slight reduction in spectrum management costs in certain areas. Licence exemption would reduce the cost incurred by Ofcom in operating a licensing regime. This could include running an award process, issuing licences, collecting licence fees and enforcing terms and conditions of licences.

Costs to consumers

A2.20 The costs to consumers of licensing versus exemption would mainly arise from the potential disincentive effects on take up of services and hence a loss of the consumer surplus that licensing costs may impose and which are discussed in the sections below.

Estimating the qualitative benefits of service take-up

A2.21 In this section, Ofcom considers the potential benefits of removing licensing obligations on service take-up. The licensing regime imposes an additional cost on a consumer using a product. This cost relates both to the licence fee levied as well as the time taken to make a licence application each time. Clearly this will affect existing users of a product who are obliged to incur these costs in order to continue utilising the product. Licensing costs can also create a barrier to the use of spectrum and could deter service take up for that product. Therefore, in addition to existing users there is a potential impact on prospective users.

A2.22 In this RIA, Ofcom has assumed that for most products the licence fee would be £50 over a five year term (i.e. the consumer would have to take necessary time to apply for a single licence covering this whole period). Users when deciding whether or not to buy a product will be likely to consider the price procuring the service in question but will also factor in the "price" associated with the licence fees. In this way, if the requirement for a product to be licensed is removed but the retail price of the product otherwise remained unchanged it would be expected (other things being equal) that total demand for the product would increase.

A2.23 The above discussion suggests that there would be likely to be an increase in service take-up but does not explain how this can be measured as a potential benefit. One approach is to consider the increase in "consumer surplus" that would arise from greater service take-up. Consumer surplus captures how much more consumers would be willing to pay for a service than the market price, and therefore how much each consumer benefits from being able to buy a particular service at a particular price. The potential benefits from service take up can therefore be reflected in the consumer surplus for those consumers who would now purchase such a service but who currently would not be prepared to pay the "higher price" of that service under a licensed regime (i.e. retail price plus licensing costs).

A2.24 To measure the consumer surplus benefit would require estimates of demand under licensed and licence-exempt regimes in order to measure consumer surplus under each scenario. Measuring the likely impact on demand will depend on a number of factors. For example, if licensing forms a small overall proportion of the cost of a service then it is unlikely to have a significant impact on service take-up as it would only be equivalent to a small reduction in price. Furthermore, it may be the case that there prospective number of new users is quite small so that even if licensing were deterring some users the total number is not likely to be very large.

A2.25 There are likely to be difficulties in estimating these demand effects without detailed estimates of demand. However, for the purposes of this RIA, Ofcom considers that it may be relatively less important to attempt to quantify the precise magnitude of any benefit. On this basis, Ofcom has considered a more qualitative approach. Nevertheless, for illustrative purposes Ofcom has also sought to derive some quantitative estimates of the potential consumer surplus benefits for a few of the products considered in this RIA.

Qualitative approaches – estimating the direction of any benefit

A2.26 In the case of the issues considered for this RIA, in directional terms, the incremental benefits associated with a reduction in admin costs are all likely to be positive. The main costs associated with spectrum relate to the allocation decision leading to inefficient use of the spectrum where the decision to permit use of the

spectrum could potentially create interference or preclude use of the spectrum for other uses that were potentially more valued by consumers.

A2.27 In the case of the proposed licence exemptions for this RIA, Ofcom has not had to consider whether a particular allocation decision should be made. Ofcom has also assumed that there are limited risks of interference (over and above licensing) because the exemption regime establishes technical parameters aimed at reducing this risk. On this basis, provided that there are sufficient benefits arising from reducing the administrative burdens of a licensing regime, it may not be necessary to seek to quantify service take-up benefits (in terms of their size). It would be sufficient to show in qualitative terms that service take-up does not work against the other benefits (i.e. service take-up brings positive benefits) and adds to the weight of evidence in favour of licence exemption.

A2.28 The main focus of a qualitative approach is on the direction of any benefit of a licence exemption (i.e. whether or not any net benefit is likely to be positive). Ofcom has made assumptions about the form of licensing likely for these licence exempt services. Where the costs associated with licence application are large relative to the value of the service in question then licensing may act as a barrier to entry. If the price of one service (for example FM transmitters) is relatively low compared to the price of, say, industrial Radar Level Gauges (which are likely to cost several thousand pounds), then if both services faced similar costs in terms of the admin associated with licensing, this is likely to have a greater impact on the lower priced service in terms of service take up.

A2.29 Other factors may however mean that demand for the service is relatively unresponsive to prices (demand is inelastic). On the other hand small price changes could have a large impact on demand (demand is elastic). Therefore reducing administrative barriers would be unlikely to enhance significantly the demand for those services which are price inelastic. In these circumstances the main benefit of the removal of administrative costs would likely fall on the existing users of that service rather than prospective users.

A2.30 The scale of administrative costs relative to the price of the service and other demand factors influencing elasticity of demand are set out in the table below. This highlights that the benefits of service take-up are likely to be positive but the scale of any benefit is likely to vary.

Table A 1.5: Qualitative assessment of service take-up benefits

Service type	Admin costs relative to price of service	Other demand factors	Impact on service take-up
CB radios	High	Inelastic	**+ve (small)**
Radar level gauges	Low	Inelastic	**+ve (insignificant)**
Micro FM transmitters	High	Elastic	**+ve (medium/high)**

SRR and movement detection systems	Medium/high	Elastic	**+ve (medium/high)**
Satellite terminals	Low/medium	Fairly inelastic	**+ve (medium)**
PMR446 digital	High	Elastic	**+ve (medium/high)**

Quantifying service take up benefits

A2.31 In this section Ofcom provides some illustrative estimates of the quantitative benefits of service take-up. For the purpose of this RIA, Ofcom is only seeking to show that service take-up provides a positive benefit and has tended to rely on qualitative assessments to demonstrate this. Nevertheless, Ofcom has sought to provide some quantitative analysis to support the case for licence exemption for some of the products considered and to estimate the potential extent of service take-up.

Methodology

A2.32 In this section, Ofcom considers the potential quantitative benefits of removing licensing obligations on service take-up. Licensing costs can create a barrier to the use of spectrum and could deter service take up for that product. Therefore, in addition to *existing* users there is a potential impact on *prospective* users.

A2.33 Given that there would be likely to be an increase in service take-up, it is necessary to find some way of measuring this potential benefit. Ofcom's approach in this RIA is to consider the increase in "consumer surplus" that would arise from greater service take-up. Consumer surplus captures how much more consumers would be willing to pay for a service than the market price, and therefore how much each consumer benefits from being able to buy a particular service at a particular price.

Step 1: estimating the demand

A2.34 The first step in the process is to estimate the demand for the product in question in order to derive an existing consumer surplus. In the absence of detailed consumer survey or market information Ofcom has had to make certain assumptions regarding "current" demand based on available information or relevant benchmarks.

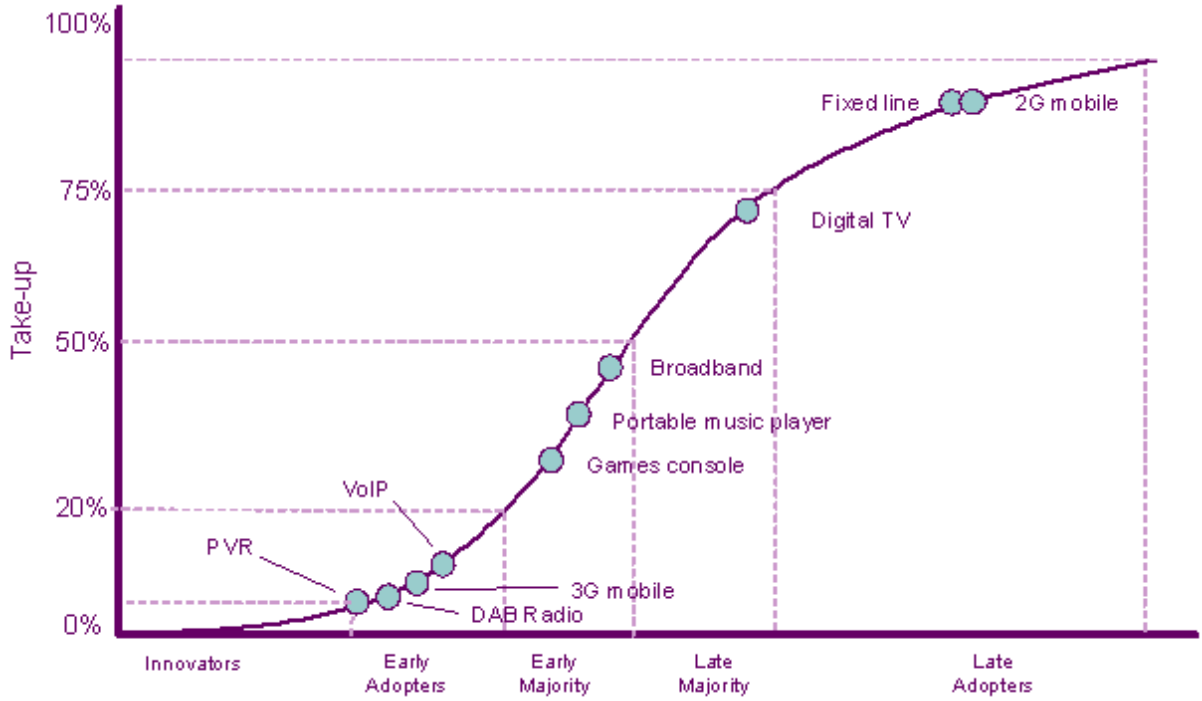
A2.35 The circumstances in which demand is measured may vary by product. For example, in relation to some products there is a licensing regime so demand estimate is under a licensing regime. In other cases there is neither a licensing nor an exemption regime therefore there will be an impact of legalising use.

Step 2: estimating the impact of licence exemption

A2.36 Ofcom has used relevant licence costs as an estimate of the price difference in retail prices in the presence and in the absence of a licence regime.[4] Measuring the likely impact on demand will depend on a number of factors. For example, if licensing forms a small overall proportion of the cost of a service then it is unlikely to have a significant impact on service take-up as it would only be equivalent to a small reduction in price (unless users are particularly sensitive to price changes). Furthermore, it may be the case that the prospective number of new users is quite small so that even if licensing were deterring some of these users the total "pent-up" demand for a product is not likely to be very large.

A2.37 To estimate total potential demand, where alternative benchmarks are not available, Ofcom has considered an adoption curve – this is an S-shaped curve to show the cumulative adoption of a new technology or innovation by society. Ofcom's latest Communications Market report included an adoption curve for different technologies shown in figure 1 below.

Figure 2 : Adoption curve for communications services and devices, Q1 2006 - Ofcom's Communications Market Overview - 2006



Source: Ofcom

Note: Penetration of DAB radio, 3G mobile and VoIP are based on individuals; other technologies are based on households

A2.38 As shown in figure 2, the above adoption curve shows take-up by number of households of different technologies. A small number of early adopters select the technology first, followed by the majority, until a technology or innovation is common. Figure 2 only shows adoption rates expressed as a percentage of total

[4] In the case where no licence fee exists, Ofcom has assumed that the licence fee would be £50 over a five year terms (i.e. a single licence covering this whole period).

households for comparative purposes. There is however a further dimension to the adoption curve, as for some technologies there may be a natural limit in terms of the maximum addressable market. Particularly for products that can be viewed as complements to another good, there will be a natural limit to take-up of the former based on the existing ownership base for the latter product. For example, sales of digital set-top boxes would be expected to have a reasonably close relationship to the ownership of televisions.

A2.39 In these circumstances, an adoption curve can also be applied to this addressable population. Using assumptions or observed data on the current level demand and the likely stage of adoption it is possible to estimate the scope of the market and the size of any additional demand. This would not provide the full picture on the likely service take-up only the potential maximum extent of the sales to that market.

A2.40 For each technology type, Ofcom has had to make further assumptions as to where a particular customer may lie on the adoption curve given the addressable market. This information has been used to formulate Ofcom's assumptions regarding the potential sensitivity (elasticity) of demand to price changes (which in this case is assumed to be equivalent to the imposition or removal of the licensing costs). As Ofcom has not been able to estimate with any certainty the elasticity for particular products, it has sought to estimate the potential impacts of licensing and exemption under different elasticity assumptions.

Citizens' Band Radios

A2.41 CB radios are an existing licensed service. To consider the potential benefits of license exemption requires consideration of how much of a deterrent the licensing regime might be on service take-up and whether there are likely to be other factors that tend to dominate demand for the product.

A2.42 Licensing costs are likely to be quite large proportion relative to the cost of procuring a CB radio. For example, the admin fees alone over 5 years (in net present value terms) would be £70.10 compared to around £100 for the cost of purchasing a CB radio.

Step 1: Estimating demand

A2.43 The existing number of licensees is around 20,000 users. Based on an estimate of current price of CB unit plus the costs of licensing therefore provides a price (£170.10) and quantity demanded (20,000).

Step 2: Estimating potential increase in demand

A2.44 The introduction of the legal 27 MHz frequency band for CB radio was some 24 years ago. Even on the basis of a slow adoption rate, the prospective number of additional users is potentially quite low as the market is likely to be particularly mature (i.e. there is limited prospect of further growth). Ofcom has estimated take up based on the likely stage of adoption for CB radios. On this basis, it is likely that elasticity of demand is fairly inelastic, Ofcom has therefore assumed that the elasticity is low (<0.5), and has considered three elasticity scenarios to estimate a

potential demand curve under the existing licensing regime.[5] The results of consumer surplus estimates are set out in table 1 below.

Table 1: Estimated calculations of consumer surplus based on elasticity assumptions

Elasticity	Estimated extent of service take-up (£)	Net consumer surplus (£)
0.5	7,010	1,647,598
0.25	3,505	1,524,761
0.125	1,752	1,463,342

A2.45 The above figures show a range of benefits between £1.46 to £1.65 million. It should be noted however that most of this benefit accrues to the existing 20,000 customers that no longer have to pay the licence costs, which equates to £1.40 million (the costs of the licence fee multiplied by the number of existing customers). Therefore, the benefit of additional service take-up using the above elasticity assumptions is in a range of £0.06 to £0.25 million.

Estimated consumer surplus = £1.46 to £1.65m

Micro "FM" transmitters

A2.46 Micro "FM" transmitters are not currently a licensed service. While there are potentially numerous innovations that might utilise this technology going forward, for the purpose of this example, Ofcom has only considered the benefits associated with Mp3 devices such as the "iTRIP" products.

Step 1: Estimating demand

A2.47 Ofcom has estimated that the current price of iTRIP is around £29. Ofcom does not have any estimates of the current customer base for iTRIPs. Nevertheless, the potential market for iTRIPs could be estimated based on the overall market for Mp3 devices. This is because an iTRIP player can only be consumed where the owner also has access to an Mp3 unit. However, this is very much an upper bound to the total demand potential, as not all Mp3 owners will necessarily demand an iTRIP (e.g. they may only wish to use Mp3 player using headphones or may not own or use a car).

A2.48 It is also likely that adoption of iTRIPs would lag the current rate of adoption for Mp3 players.

A2.49 As shown in figure 2 above, the percentage take-up of Mp3 players is around 35 percent of all households. Based on current sales to date, this would equate to a potential market of 8.75 million Mp3 players. For the purpose of this impact assessment Ofcom has taken a reasonably conservative assumption and has considered that the maximum size of the potential iTRIP market would be 10 percent of the Mp3 market. This would be equivalent to 875,000 units.[6]

A2.50 In relation to the existing market, it should be noted that iTRIPs are currently on sale in the UK and have been overseas for sometime. In the absence of exemption it remains illegal to use a unit in the UK without a licence, but there may have been

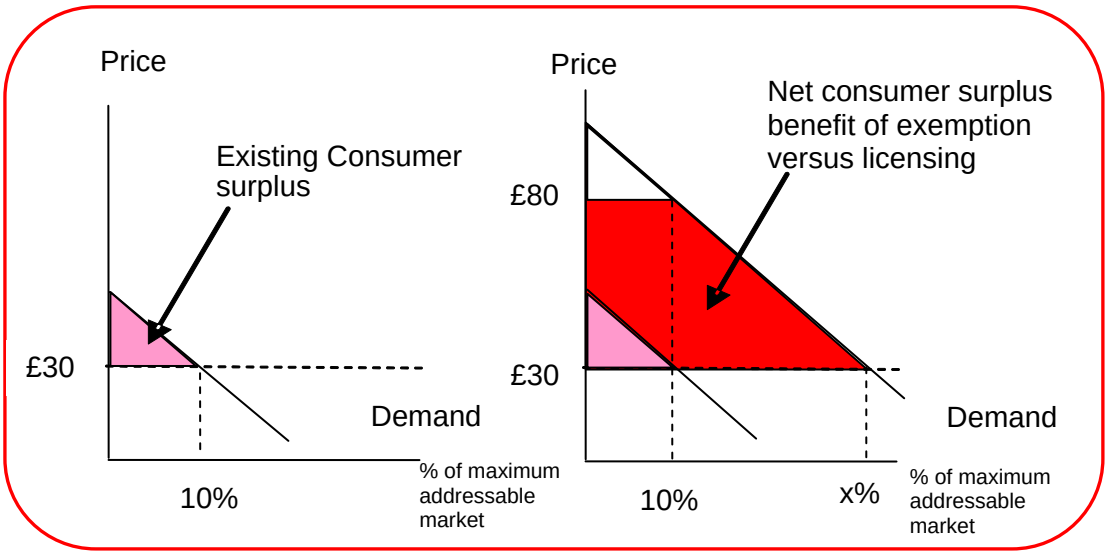
[5] This is a linear demand curve of the form $p = (-a)(q) + b$, where p = retail price, q = quantity demanded, $(-a)$ represents the slope of the demand curve $(0<a<1)$ and b is a constant term.
[6] For the purpose of this IA, we have ignored any further potential take-up of Mp3 players over the course of this period.

early adopters aware of Ofcom's proposed consultation or have purchased the iTRIP to use overseas in jurisdictions where it is legal to do so. There may also be other users that have been using ITRIPs illegally. Ofcom has therefore assumed that as an initial starting position that at least 10 per cent of the total addressable market for iTRIPs has already adopted the technology.

Step 2: Estimating potential increase in demand

A2.51 The above discussion suggested that there is an existing consumer base for iTRIPs. However, the illegality of use is likely to be a major barrier to more widespread adoption of this technology. Under both the licensing and exemption route there is likely to be shift in demand in relation to permitting use of iTRIPs legally. In addition, there are potential impacts on consumer surplus of licensing versus exemption as shown in figure 3.

Figure 3: Consumer surplus before and after the removal of licensing



A2.52 The left hand diagram shows Ofcom assumption that around 10 percent of the addressable market for iTRIPs might have already adopted the technology. In these circumstances it is possible to estimate current consumer surplus based on assumptions regarding the elasticity of the demand curve at this point. Table 2 provides estimates of consumer surplus based on different elasticity assumptions.

Table 2: "Existing" consumer surplus

Elasticity	Existing consumer surplus (10 percent adoption and £30 retail price) (£)
0.5	2,625,000
1	1,312,500
1.5	875,000

A2.53 The right hand diagram shows that demand curve would shift outwards by some amount given that iTRIPs will become legalised. In figure 3, at the current retail prices of £30, consumers would demand an amount representing "x" percent of the addressable market. Ofcom has not specified a particular number here, but as set out in table 3 below, has instead applied different scenarios (namely an increase to

25 per cent, 50 per cent and 75 per cent of the addressable market). This methodology is slightly different to the approach adopted for CB radios. This is on the basis that there is an additional effect associated with legalising the micro FM technology.

A2.54 Given the different scenarios in relation to this outward shift in the original demand curve, Ofcom has calculated the consumer surplus under an exempt and licence exempt regime based on different elasticity assumptions to derive a potential demand curve. It can be seen in figure 3 that under a licence regime that we have assumed that a consumer having to pay £80 (£30 for an iTRIP plus a £50 licence fee) can be compared against the exempt regime where a £30 retail price is assumed.

Table 3: Estimated net consumer surplus benefit of exemption under different demand assumptions

	Demand scenario (as % of addressable market)		
Elasticity scenario	25%	50%	75%
0.5	6,562,500	17,500,000	28,437,500
1	5,979,167	16,916,667	27,854,167
1.5	4,593,750	15,531,250	26,468,750

A2.55 It should be noted that the figures in table 3 provide estimates of net consumer surplus for exemption relative to licence exemption. In addition, the above figures also exclude the existing consumer surplus as shown in table 1 based on Ofcom's assumption about the size of the "existing" customer base. In other words the relevant comparison is the impact of legalising iTRIPs and the relative consumer surplus benefit that would accrue under a licence exempt or licensing regime.

A2.56 Based on Ofcom's calculations, the net consumer surplus benefit of exemption is between £4.6 million to £28.4 million depending on assumptions about demand and potential growth in iTRIP usage over the period considered in this RIA[7].

Estimated net consumer surplus = £4.6 to £28.4 million

Radar level gauges

A2.57 Businesses are currently licensed to use Radar Level Gauges but no licence fee is levied for their use. The licence would last for the lifetime of the product. Radar level gauges are likely to be very specialised products used for specific industrial applications. As the administrative costs are likely to form a small proportion of the overall costs of these products, it is unlikely that this will be a significant barrier to entry.

A2.58 On this basis, any additional benefits are likely to be the avoided costs to existing businesses in terms of administrative costs which have already been captured as a benefit elsewhere in this document.

[7] It should be noted that where demand is more elastic (i.e. in scenarios where elasticity was greater than or equal to 1), the licensing regime would act as a deterrent to take-up to such an extent that no additional demand and hence no consumer surplus benefit would accrue and a licensed regime.

Satellite terminals

A2.59 One of the Satellite technologies captured by the licence exemption regime is High Density Fixed Satellite Services (HDFSS) which is a satellite technology designed to provide broadband internet and multi media access to users not served by conventional terrestrial 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.

A2.60 While there are numerous applications that could be rolled out using Satellite based services to rural customers, Ofcom has considered the potential benefits in relation to broadband access. Broadband satellite technology has an ability to provide broadband capabilities to end-users based nearly anywhere in the UK. End-users need a satellite dish and a modem and can be provided with a one-way connection (download only) or a two-way connection (the latter would mean that the end-user would need to obtain a dial-up service as well). Satellite broadband services are widely available and there are many providers in the market who can offer variously one-way, two-way or both one-way and two-way and at many bandwidths. Prices for these services also vary considerably.

A2.61 Satellite broadband services have features common to wireless broadband services in that there needs to be 'line of sight' and that they could be used to provide broadband services in areas in which it would be prohibitive to install fixed broadband services. They are, however, likely to be expensive as well and, in many instances, therefore, are likely to be suitable for the most remote areas or for offshore services.

A2.62 It is necessary to estimate demand and potential take up based on assumptions about the adoption curve for these technologies.

Step 1: Estimating demand

A2.63 Estimates of demand for satellite terminals for the purpose of broadband access were considered in work Ofcom commissioned from Scientific Generics "Understanding the Scope for a Power Increase for Wireless Broadband Access at 2.4GHz & 5.xGHz"[8]. In this report, the costs of broadband satellite were estimated at around £90 per month for residential customers and £500 per month for business customers. Some 9,000 UK satellite connections were assumed and that the proportion of business customers represented by this number of connections was 8 percent. The above data only provides a single point on the business and residential demand curves. In order to provide more detailed estimates would require comprehensive data, which Ofcom has not collected.

Step 2: Estimating potential increase in demand

A2.64 The question is what price would encourage greater demand for broadband satellite services? As stated above, satellite is in many instances, therefore, likely to be suitable for the most remote areas or for offshore services. Hence, ssatellite services are therefore more likely in areas where DSL exchanges have not been enabled or where customers in a DSL enabled exchange but, for example, their geographic location is such that they are still too remote to gain functionality or access to DSL.

[8] http://www.ofcom.org.uk/research/technology/overview/ese/exempt/

A2.65 For the purpose of this RIA, Ofcom has considered that the potential further roll-out of satellite services is likely to be limited by other competing technologies. As a conservative assumption, Ofcom has therefore assumed that the size of the satellite market remains broadly constant. However, it may be the case that the additional functionality associated with satellite services by virtue of the wider bandwidths it can operate over would be reflected in a higher willingness to pay for these services by existing customers.

A2.66 Ofcom has calculated existing consumer surplus for residential and business customers based on the observed demand of 9,000 satellite terminals and the retail prices set out above.

Table 4: Existing consumer surplus

Elasticity	Existing residential consumer surplus (£)	Existing business consumer surplus (£)
1.0	372,600	180,000
0.5	745,200	360,000
0.25	1,490,400	720,000

A2.67 To consider the impact of a potential increase in the willingness to pay, Ofcom has assumed that each existing customer will value additional functionality of satellite terminals by a relatively small amount – namely twenty percent. Given this increase in the willingness to pay, Ofcom has compared the consumer surplus under licence exempt and licensed regime.[9]

Table 5: Overall consumer surplus given increase in willingness to pay

Elasticity	Licence exempt		Licensed	
	Residential (£)	Business (£)	Residential (£)	Business (£)
1.0	608,580	294,000	221,413	253,500
0.5	1,049,490	507,000	648,907	468,750
0.25	1,940,625	937,500	1,533,333	900,375

A2.68 Table 5 shows that the benefits accruing under a licence exempt regime are higher relative to licensed arrangements. The benefits for residential customers are more than £0.4 million higher. For business this figure is lower at just over £0.04 million.

A2.69 Having compared the licence exempt and licensed regime given the change in the willingness to pay, table 6 provides the final step in Ofcom's calculations. Table 6 shows the increment benefit of exemption relative to licensing. Furthermore, it is necessary to take appropriate account of the existing consumer surplus to show the net incremental consumer surplus benefits from exemption.[10]

Table 6: Net incremental consumer surplus benefit of exemption

Elasticity	Existing residential consumer surplus (£)	Existing business consumer surplus (£)

[9] In order to calculate a revised demand curve that reflects this willingness to pay, Ofcom assumed that the demand curve would not shift outwards in a uniform way for all units but Ofcom has assumed that the slope of the demand curve increases. This is equivalent to the holding the maximum possible demand constant.

[10] To adjust these figures, Ofcom had to calculate consumer surplus based on demand at current prices and following the imposition of a licence fee to current demand (i.e. as if licensing had been imposed on the existing customer base with no other changes to demand or retail prices). This amount is then subtracted from the incremental benefit of an exemption (based on figures in table 5).

1.0	88,167	6,300
0.5	44,083	3,150
0.25	22,042	1,575

A2.70 The above calculations show that the estimated net consumer surplus benefit is minimal. This is reflective of these benefits are shown in terms of the net incremental benefit of an exemption regime relative to licensing; the existing consumer surplus is spread across a relatively limited customer base; the benefits of authorisation will be only be reflected greater willingness to pay within the existing customer base; and Ofcom's assumptions regarding fairly low elasticities. The above analysis should therefore be viewed as being based on fairly conservative assumptions and only considers the net impact for satellite terminals for broadband use, whereas there could be much wider functionality associated with authorisation of greater use of the spectrum.

A2.71 Nevertheless, based on these assumptions the results indicate a net benefit of up to around £88,000 to residential customers and around £6,000 for business customers. This would be equivalent to a weighted average of up to £82,000.

Estimated net consumer surplus:

- **Up to £88,167 for residential customers**
- **Up to £6,300 for business customers**

SRR and movement detection systems

A2.72 There is a range of applications for Short Range Radar and movement detection systems. For short range radar, the proposals are to increase the available bandwidth within the 24 Ghz and 2.4 Ghz ranges. Ofcom's previous RIA for the extension of SRR to use within the 24 Ghz band[11] estimated the benefits of the uptake of SRR devices was in the region of £140 to £280 million. As the proposed licence exemption would entail lifting some restrictions on the usage of SRR in the existing bands, these estimates could provide an indication of the benefits associated with SRR applications.

A2.73 Given that an existing licence exemption is available for SRR these benefits may have accrued already (albeit under more restrictive conditions). The proposal is to de-restrict the areas of the spectrum that these licence applications could use will nevertheless create scope for greater flexibility and potentially additional functionality in SRR design. It should be recalled however that the question in the context of this IA is to quantify the impact of licence exemption versus licensing rather than the initial allocation decision. **Based on the above calculations even if the removal of licensing were to result in only a 1% increase in demand this would deliver an additional £1.4 to £2.8 million benefit.**

A2.74 Movement detection systems include a range of applications from Burglar Alarms and speed monitoring. For the purpose of this impact assessment, for the reasons set out previously, Ofcom has only sought to identify indicative costs in some of the areas considered by the licence exemption. For movement detection systems it would be fairly impractical to seek to quantify the benefits given the range of applications or potential innovations that could utilise spectrum for these technologies.

[11] http://www.ofcom.org.uk/consult/condocs/24ghz/24ghz.pdf

Short range radar (SRR) – **£1.4 to £2.8 million for 1% increase in demand**

Conclusions

A2.75 Based on the above calculations the following illustrative benefits of exemption relative to licensing have been estimated. These figures represent the benefits of additional service take-up rather than the consumer surplus benefits on "existing" users in each case.

	Indicative benefits of service take-up
CB Radios	**£0.05 to £0.2 million**
Micro FM transmitters	**£4.6 to £28.4 million**
Radar Level Gauges	**Limited consumer surplus gain**
Satellite terminals	**Up to £0.08 million**
Short Range Radar	**£1.4 to £2.8 million (for each 1% increase in customer base)**

Annex 3

List of Respondees

A3.1 The following submitted non-confidential responses to the consultation document "Amending the Wireless Telegraphy (Exemption) Regulations 2003" which ran from 14 July to 22 September 2006. The responses may be viewed on the Ofcom website at http://www.ofcom.org.uk/consult/condocs/wtexemption/responses/

1. A Foad
2. J Allen
3. Andy Taylor
4. A Bates
5. P Birch
6. A Bridgens
7. C Orton
8. Charlotte Windsor
9. Colin Burgess
10. D Hall
11. D Thomas
12. J Dale
13. M Davies
14. DSG Retail Limited
15. E Li
16. Euro Freshners
17. R Foreman
18. Gary Campbell
19. Gary Johnson
20. C Gee
21. S Graham
22. P S Gregory
23. P Harris

24. Inmarsat
25. Joe McGonagle
26. K Spillett
27. L Gary
28. Lee
29. R Leggett
30. B Marks
31. Martin J Stone
32. S Maskrey
33. Mic
34. Motorola
35. Mr Butcher
36. Mr G Firth
37. Mr Gadman
38. Mr Hunter
39. Mr J flint
40. Mr K Bird
41. Mr Ling
42. Mr P Hadler
43. Mr P white
44. Mr Price
45. Mr Robert Law
46. Mr T Hazel
47. Mr Watkins
48. Name Withheld 1
49. Name Withheld 2
50. P Owen
51. Paul

52. R Greasly
53. R Lapthorn
54. Radica Broadcast Systems
55. Radiometrix Ltd
56. Rev P M Reece
57. L Robinson
58. S Bruce
59. Siemens VD Automotive
60. Society of Model Aeronautical Engineers
61. T Pursall
62. The British Broadcasting Corporation
63. F Thomson
64. UK Microwave Group
65. United Kingdom Radio Control Council
66. J Valentine
67. William

Annex 4

Responding to this consultation

How to respond

A4.1 Ofcom invites written views and comments on the issues raised in this document, to be made **by 5pm on 6 November 2006**.

A4.2 Ofcom strongly prefers to receive responses using the online web form at http://www.ofcom.org.uk/consult/condocs/exemption/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 (see Annex 6), to indicate whether or not there are confidentiality issues. This response coversheet is incorporated into the online web form questionnaire.

A4.3 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.

A4.4 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

A4.5 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.

Further information

A4.6 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

A4.7 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).

A4.8 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.

A4.9 Ofcom reserves its power to disclose any information it receives where this is required to facilitate the carrying out of its statutory functions.

A4.10 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

A4.11 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

A4.12 Ofcom seeks to ensure that responding to a consultation is as easy as possible. For more information please see our consultation principles in Annex 5.

A4.13 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.

A4.14 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 5

Ofcom's consultation principles

A5.1 Ofcom has published the following seven principles that it will follow for each public written consultation:

Before the consultation

A5.2 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

A5.3 We will be clear about who we are consulting, why, on what questions and for how long.

A5.4 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.

A5.5 We will normally allow ten weeks for responses to consultations on issues of general interest.

A5.6 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.

A5.7 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

A5.8 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 6

Consultation response cover sheet

A6.1 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.

A6.2 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.

A6.3 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.

A6.4 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/.

A6.5 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	☐	Name/contact details/job title	☐
Whole response	☐	Organisation	☐
Part of the response	☐	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)