OFFICE OF COMMUNICATIONS

Wireless Telegraphy Licence Exemption

Amending the Wireless Telegraphy (Exemption) Regulations 2003

Consultation

Publication date: 18 September 2007

Closing Date for Responses: 27 November 2007

Contents

Section 1

Executive Summary

Introduction

1.1 Ofcom is responsible for authorising of civil use of the radio spectrum and achieves this by granting wireless telegraphy ("WT") licences under the Wireless Telegraphy Act 2006 (the "2006 Act") and by making Regulations exempting users of particular equipment from the requirement to hold such a licence. Under section 8(1) of the 2006 Act, it is an offence to install or use equipment to transmit without holding a licence granted by us, unless the use of such equipment is exempted. However under Section 8(4) of the 2006 Act we must make Regulations to exempt equipment if its installation or use is unlikely to cause undue interference.

1.2 Exemption is realised by describing the details of equipment and the parameters under which it may be used in a Statutory Instrument[1] that exempts users of such equipment from the need to hold a WT licence provided they comply with the terms of the Regulations.

Overview of Proposed Changes

1.3 This consultation document contains a range of proposals to change arrangements for licence exemption in the UK. These include:

- measures to permit the use of a range of new technologies and novel radio applications of radio without the need for users to obtain a licence from us -
  - Building Material Analysis devices using Ultra Wide Band technologies; and
  - High Density applications in the Fixed Satellite Service (HDFSS);
- measures to amend the use of licence-exempt Meter Reading & Asset Tracking devices;
- measures to harmonise with Europe where such measures are legally required or viewed as beneficial; and
- measures to simplify the regulatory process.

1.4 The detail of, and rationale for, each of the new exemption proposals is explained more fully in the relevant sections of this document.

1.5 We plan to implement these changes by amending the current Wireless Telegraphy Exemption Regulations (the "Exemption Regulations"), which came into force in 2003.

Responding to this consultation

1.6 We would welcome comments or views on any aspect of this document by **5pm** on **27 November 2007**. In particular:

[1] Secondary legislation called Regulations.

Question 1) Do you agree with our proposal to permit the licence-exempt use of Building Material Analysis devices in specific spectrum bands using Ultra Wide Band technology?

Question 2) Do you agree with our proposal to exempt users of High Density applications in the Fixed Satellite Service operating with e.i.r.p. no greater than 50 dBW in the 27.50-27.8185 GHz, 28.4585-28.8265 GHz and 29.4625-30 GHz bands from the need to possess a WT licence?

Question 3) Do you agree with our proposal to allow an increase in power for Meter Reading & Asset Tracking licence-exempt devices in the 169.4 - 169.475 MHz band to 500mW?

Question 4) Do you have any comments on our proposals to align with the draft Commission Decision relating to SRDs??

Question 5) Do you have any comments on our proposal to simplify the LMSS equipment listings in the Exemption Regulations and IR2016?

Next steps

1.7 Following the closure of this 10 week consultation and having considered responses, we plan to issue a statement including the draft Exemption Regulations that should, allowing for issues raised in response to this consultation, implement the proposals outlined in this document. We will consult on the draft Exemption Regulations and then will seek to bring the Regulations into force by March 2008.

Section 2

Introduction

Background

2.1 The radio spectrum is a finite resource of considerable economic and social value. Spectrum is essential for modern communications and broadcasting, for the effective operation of military and emergency services, and for safe and efficient transport and other infrastructure systems. It also has many scientific, social and educational applications. In the UK uses of spectrum such as mobile communications and broadcasting account for about 3% of the economy.

2.2 Spectrum use has to be managed to prevent radio signals from interfering with each other. To do this we grant the right to transmit at particular powers, on a particular frequency over a particular geographical area. We usually issue this right to transmit in the form of licences issued under section 8(1) of the WT Act. All use of radio equipment requires such a licence unless it has been specifically exempted from the need to possess one.

2.3 We seek wherever possible to reduce the regulatory burden upon our stakeholders, in this instance users of the radio spectrum. One way in which we can do this is to remove the need for spectrum users to apply for individual licences to authorise the use of radio equipment.

2.4 So, in accordance with the WT Act, we aim to exempt from licensing the use of specified equipment whose use is unlikely to cause undue interference to other legitimate users of the radio spectrum or contrary to an international obligation.

2.5 In making a device exempt from licensing we specify the characteristics of the equipment that can be used. By defining the maximum transmit power, along with other characteristics of equipment we exempt, we keep the probability of interference low. However, users also need to be aware that there are no guarantees that the spectrum will be totally free of interference.

2.6 Licence-exempt devices range from mobile phone handsets, 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 and identity cards that activate doors.

Current legislation

2.7 Currently there are a number of Regulations that exempt WT transmitting equipment from the need to have an individual licence. The relevant Regulations are as follows[2]:

- the Wireless Telegraphy (Exemption) Regulations 2003;
- the Wireless Telegraphy (Radio Frequency Identification Apparatus) (Exemption) Regulations 2005;
- the Wireless Telegraphy (Automotive Short Range Radar) (Exemption) Regulations 2005;

[2] Available at http://www.ofcom.org.uk/radiocomms/isu/licence_exempt/regulations/.

- the Wireless Telegraphy (Automotive Short Range Radar) (Exemption) (No.2) Regulations 2005;
- the Wireless Telegraphy (Exemption) (Amendment) Regulations 2006;
- the Wireless Telegraphy (Radio Frequency Identification Equipment) (Exemption) (Amendment) Regulations 2007; and
- the Wireless Telegraphy (Ultra-Wideband Equipment) (Exemption) Regulations 2007.

2.8 Circumstance have made it necessary to make separate Regulations, such as when we have had to implement a European Commission Decision to a tight deadline. We continue to endeavour to minimise the number of separate Regulations and for this reason we intend to apply the proposed changes to exemption arrangements set out in this document by amending the Exemption Regulations.

2.9 Additionally, WT equipment operating on specified frequencies under suppressed radiation conditions for testing or development purposes are exempt from the need to hold a WT licence by the Wireless Telegraphy (Testing and Development Under Suppressed Radiation Conditions) (Exemption) Regulations 1989.

Proposals to amend the Exemption Regulations

2.10 This document discusses proposals to amend the Exemption Regulations in order to allow new types of equipment to operate on a licence-exempt basis or to amend arrangements for frequency bands and equipment that are already subject to licence-exemption.

2.11 The proposed changes to the Exemption Regulations outlined in this document address a range of areas and fall into four broad categories:

- new requirements – where use of equipment is being made newly licence-exempt because we are either 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 are:
  - BMA devices using UWB technology; and
  - HDFSS.
- measures to amend the use of licence-exempt Meter Reading & Asset Tracking devices;
- changes to existing exemptions in relation to some devices – where currently specified conditions in the Exemption Regulations need to change to harmonise with Europe where such measures are viewed as beneficial; and
- measures to simplify the regulatory process.

2.12 The rationale for each of the new exemption proposals is explained more fully in the subsequent specific sections of this document.

The Radio and Telecommunications Terminal Equipment Directive

2.13 Licence-exempt devices put into service after April 2000 must be compliant with the Radio and Telecommunications Terminal Equipment (R&TTE) Directive[3]. The European Telecommunication Standards Institute (ETSI) produces "harmonised" equipment standards for most licence-exempt equipment. Compliance with these standards provides an assumption of conformity with the R&TTE Directive, and the use of these standards has proved a popular method for manufacturers and suppliers to ensure compliance. For this reason, where a harmonised standard is available for a particular type of equipment, details of the standard have been provided with the proposal.

Interface requirements

2.14 Interface requirements (IRs) for radio equipment provide a link between the requirements of the R&TTE Directive and the use of national radio spectrum. The UK interface requirements describe the minimum technical specifications, such as power limits, frequency bands and channel spacing, which are necessary to avoid interference between services. Radio equipment must meet the UK interface requirements. We publish current UK interface requirements at: http://www.ofcom.org.uk/radiocomms/ifi/tech/interface_req/ and describe the minimum permissible requirements for the use of particular equipment in designated spectrum bands.

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

Future Policy

2.16 We have recently closed our consultation on the framework for future licence-exemption policy. The Licence Exemption Framework Review (LEFR) document[4] identifies a number of ways in which future spectrum can be released for licence-exempt use. The Spectrum Framework Review (SFR) suggested that spectrum use should be licence-exempt if the value that is expected to be derived from the spectrum under such an approach is predicted to be greater than if spectrum use were licensed. It also noted that where harmful interference is unlikely (e.g. where the demand for spectrum in a given frequency band is less than the supply), licensing may present an unnecessary overhead and a licence-exempt model may be more appropriate. These guidelines were taken as the starting point for the LEFR.

2.17 The LEFR addressed a number of questions concerning how licence-exempt use of the spectrum might be managed in the future. These included:

- whether the licence-exempt use of the spectrum should be based on an application-specific model or a spectrum commons approach;

[3] Directive 1999/5/EC of the European Parliament and of the Council of 9 March 1999 on radio equipment and telecommunications terminal equipment and the mutual recognition of their conformity. Available at http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:31999L0005:EN:NOT.
[4] Available at http://www.ofcom.org.uk/consult/condocs/lefr/.

- whether there is a frequency limit above which all spectrum use can be made exempt from licensing; and

- whether there is a transmission power limit below which all emissions can be made exempt from licensing.

2.18 We are currently reviewing the responses we received and are planning to publish our conclusions later this year.

Document Structure

2.19 Sections 3 to 7 describe the proposals related to exempting specific equipment. A summary of the questions raised in this consultation is set out in Annex 1 and a Regulatory Impact Assessment can be found in Annex 2. Information on responding to this consultation and our consultation principles are set out in Annexes 3 and 4.

Section 3

Building Material Analysis devices using Ultra Wide Band technology

Background

3.1 BMA is a specific application using UWB technology to provide accurate imaging measurements. The narrow pulses used by UWB imaging systems enable them to make measurements, allowing the identification of different materials and analysis in three-dimensions to an accuracy of one millimetre. BMA devices are expected to be used in a number of markets including the workplace, security, and manufacturing.

3.2 An Electronic Communications Committee (ECC) Decision (ECC/DEC(07)01)[5] (the "ECC Decision") has been developed in response to market demands for BMA devices using UWB technology. The ECC Decision has been developed in the context of a Commission mandate to the European Conference of Postal and telecommunications Administrations (CEPT) to identify conditions relating to harmonised introduction in the member states of the European Union of radio applications based on UWB technology.

3.3 The use of BMA does not fall under the generic Wireless Telegraphy (Ultra-Wideband Equipment) (Exemption) regulations 2007 as this application is specific to accurate imaging applications where a different technical requirement is needed. Likely users of BMA devices include skilled workers, experts, art historians and architects.

3.4 The Commission is currently considering harmonising the technical parameters for BMA devices across the EU. We believe that the technical requirements set out in IR2069 are likely to meet any proposed Decision. In the event of the Commission adopting a Decision we will review the technical parameters and amend these proposals as appropriate in order to implement the Decision.

3.5 We have decided to proceed with proposals to exempt BMA devices prior to the Commission's adopting a Decision as we believe that the technical parameters set out in the ECC Decision are sufficient to minimise any potentially harmful interference, and that UK consumers should benefit from the avoidance of delay.

Proposal details

3.6 Licence-exemption is proposed as the appropriate method of authorisation on the basis that BMA equipment is unlikely to cause undue interference to other users of the radio spectrum when operating in accordance with the requirements of the ECC Decision.

3.7 The ECC Decision identifies a number of technical parameters necessary to ensure the efficient use of the available spectrum and avoid interference. These were arrived at after a detailed analysis of the ability of different services and users to coexist in the band. The technical requirements include:

[5] Available at http://www.ero.dk/documentation/docs/doc98/official/pdf/ECCDEC0701.PDF.

- a requirement for a manually operated non-locking switch when the transmitter is on and equipment only operating in close proximity to the investigated material through e.g. a proximity sensor;

- a requirement for the transmitter to switch off after no more than 10 seconds without movement;

- undesired emission limits defined in terms of maximum mean Equivalent Isotropically Radiated Power (e.i.r.p.) spectral density and maximum peak e.i.r.p. specified for the frequency range of operation between 2.2 and 8 GHz. The total radiated power should be 5dB lower than the maximum mean e.i.r.p. spectral density limits; and

- higher permitted power levels are available in the bands 1.215–1.4 GHz, 1.61-1.66 GHz, 2.5–2.69 GHz band and 2.7–3.4 GHz. In order to operate at higher power levels the device must use "Listen Before Talk"[6] (LBT) polite protocol. The higher power thresholds for these bands are set out in IR2069.

3.8 ETSI have developed a harmonised standard (EN 302435) for BMA in the band 2.2-8 GHz. A public consultation on the standard closed on 31 August 2007. The standard specifies the LBT requirement and additional technical conditions listed above.

3.9 We believe that the solution developed by CEPT will enable the successful use of BMA devices while minimising the risk of interference. We consider that the adoption of Europe-wide technical conditions in this case will aid the development of the market and may help to encourage competition and the benefits from economies of scale.

3.10 We propose to exempt from licensing BMA devices using UWB technology subject to the conditions described above. As with all licence-exempt equipment, BMA devices must be compliant with the R&TTE Directive. Compliance with the standard EN 302 435 is not mandatory but provides a presumption of conformity.

Impact

3.11 As with all licence-exempt equipment there is a risk of interference to other users of the spectrum. We believe, however, that authorising use subject to the technical restrictions identified means that undue interference is unlikely.

Benefits

3.12 Authorising the use of BMA using UWB technology in the UK will enable a new market for this equipment, which will benefit UK consumers. Authorising through licence-exemption is in line with our approach to other short range devices (SRDs) where undue interference is deemed unlikely. Compared to the alternative of individually licensing each device licence-exemption reduces both consumers and our costs.

Implementation

3.13 BMA licence-exemption would be achieved by adding an appropriate reference to the Exemption Regulations.

[6] *Listen-Before-Talk* is a protocol method that tells one device to listen for another device's transmissions before it starts it own.

3.14 The relevant technical requirements will be recorded in IR2069.

Question 1) Do you agree with our proposal to permit the licence- exempt use of BMA devices in specific spectrum bands using UWB technology?

Section 4

High Density applications in the Fixed Satellite Service

Background

4.1 HDFSS is a generic term for satellite technology designed to provide broadband Internet and multi-media access. It includes all applications of qualifying earth stations[7] operating in the Fixed Satellite Service (FSS) (including Very Small Aperture Terminals (VSATs)) and uses small, low-power earth stations and antennae (often less than one metre), allowing for flexible, rapid and widespread deployment of networks. The potential application of HDFSS in rural areas of the UK could help to deliver broadband, interactive digital television and High Definition (HD) television to those areas not served by terrestrial delivery.

4.2 The International Telecommunication Union (ITU) World Radio Conference in 2003 identified a number of suitable bands for HDFSS including spectrum at 28 GHz[8]. Following this CEPT ECC Decision ECC/DEC(05)01[9] designated the bands 27.5-27.8285 GHz, 28.4445-28.9485 GHz and 29.4525-29.5 GHz for the use of uncoordinated FSS earth stations and set parameters intended to ensure that there was no undue interference to Fixed Services in adjacent bands.

4.3 We have already published our intention to award parts of the 28 GHz band on a flexible, technology and application neutral basis[10]. In addition, some of the spectrum identified in ECC/DEC(05)01 is already in use in the UK by other services. Therefore, we do not propose to make the entirety of the band identified in this ECC Decision available to satellite earth stations, but are proposing to make use of the 27.5-27.8185 GHz, 28.4545-28.8265 GHz and 29.4625-30 GHz bands available on a licence-exempt basis.

4.4 Another ECC Decision (ECC/DEC(06)03)[11] sets out the operational characteristics of satellite earth stations necessary to avoid interference into electronic equipment on board aircraft when the satellite terminals are deployed adjacent to airfields. Our negotiations with site-clearance stakeholders have resulted in a relaxation of the limitations given in ECC/DEC(06)03 regarding the use of satellite terminals close to airfields.

4.5 The fact that these bands have been identified for uncoordinated use by the ITU and CEPT does not imply that they cannot be used for coordinated earth station applications with an e.i.r.p. > 50 dBW.

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[7] Any terminal with an e.i.r.p. ≤ 50 dBW.
[8] Radio Regulations RR 5.516B and resolution (Res. 143) regarding implementation of systems.
[9] ECC Decision of 18 March 2005 on the use of the band 27.5-29.5 GHz by the Fixed Service and uncoordinated Earth Stations of the Fixed-Satellite Service (Earth-to-Space).
[10] "Award of available spectrum: 10 GHz, 28 GHz, 32 GHz and 40 GHz" published June 2006. available at http://www.ofcom.org.uk/consult/condocs/10ghz/spec_condoc.pdf.
[11] ECC Decision of 24 March 2006 on Exempting from Individual Licensing of high e.i.r.p. satellite terminals (HEST) operating within the frequency bands 10.70–12.75 GHz or 19.70-20.20 GHz space-to-Earth and 14.00-14.25 GHz or 29.50-30.00 GHz Earth-to-space (ECC/DEC(06)03). Available at http://www.ero.dk/documentation/docs/doc98/official/Word/ECCDEC0603.DOC.

4.6 We have already consulted on licence-exemption of HDFSS terminals in the bands 27.5-27.8185 GHz and 28.4545-28.8265 GHz[12]. However, we did not implement this proposal due to a concern raised by the Commission related to the inclusion in IR2066 of two 10 MHz guard bands and references to measures that dealt with emissions outside the band to prevent harmful interference to other services. These issues have now been addressed in the finalised updated IR2066.

Proposal details

4.7 To facilitate the deployment of low-power, uncoordinated earth stations in a way that makes it unlikely that this equipment will cause undue interference, We propose to licence-exempt the establishment, installation and use of this equipment operating with e.i.r.p. no greater than 50 dBW in the bands 27.5-27.8185 GHz, 28.4545-28.8265 GHz and 29.4625-30 GHz.

4.8 Licence-exemption is proposed as the appropriate authorisation method because HDFSS equipment used in the identified bands is unlikely to cause undue interference to other users of the radio spectrum when operating in accordance with specified technical parameters set out in IR2066.

4.9 The appropriate changes will be made to IR2066 to include the frequency ranges and the associated European Standards EN 301 459, EN301 360 and EN301 489 -12. In order to facilitate compatibility with avionic equipment we propose to add text to the informative part of IR2066 to state that the Civil Aviation Authority (CAA) requires that prior to installation and operation of equipment within the perimeter fence of airfields, permission is obtained from either the CAA or the appropriate airport authority. A list of the relevant airfields and contact information will be included in an annex to the IR.

4.10 We propose to exempt from licensing HDFSS devices operating with e.i.r.p. no greater than 50 dBW using the 27.5-27.8185 GHz, 28.4545-28.8265 GHz and 29.4625-30 GHz bands. As with all licence-exempt equipment, HDFSS devices must be compliant with the R&TTE Directive. Compliance with the standards EN 301 459, EN 301 360 and EN301 489 -12 is not mandatory but provides a presumption of conformity.

Impact

4.11 The bands are currently open to coordinated satellite earth stations operating at higher radiated powers that will still be subject to site clearance and the requirement to have a Permanent Earth Station licence. Because both types of terminal use frequencies that are assigned and coordinated by the space station operators, no undue interference is expected to occur between the co-located, co-frequency earth stations. As such the use by coordinated earth stations can continue and is not expected to face undue interference from the introduction of licence-exemption for uncoordinated earth stations.

4.12 We have considered the opportunity cost involved in making this spectrum band available for HDFSS on a licence-exempt basis and concluded that this is low[13].

[12] 2006 Licence Exemption Amendment consultation http://www.ofcom.org.uk/consult/condocs/wtexemption/exemption.pdf.
[13] Outlined in Annex 2 Regulatory Impact Assessment.

4.13 In particular we do not expect the licence-exemption of satellite earth stations to prevent use of the band by other applications that can operate on a detect-before-transmit (cognitive) basis to avoid interference from satellite terminals.

Benefits

4.14 These changes will remove the need for a licence to deploy small FSS earth stations providing broadband Internet and multi media access to users. This aligns with both UK and EU policy objectives. In particular this may benefit consumers not served by conventional terrestrial networks such as those in some rural areas of the UK, enhancing the ability to deliver broadband, interactive digital television and HD television to those areas not served by terrestrial delivery.

Implementation

4.15 HDFSS will be added the Exemption Regulations and the associated IR2066 will be updated.

Question 2) Do you agree with our proposal to exempt users of HDFSS operating with e.i.r.p. no greater than 50 dBW in the 27.50-27.8185 GHz, 28.4585-28.8265 GHz and 29.4625-30 GHz bands from the need to possess a WT licence?

Section 5

Meter Reading & Asset Tracking

Background

5.1 In 1990 the 169.4-169.8125 MHz band was designated within the EU, through a Directive, for the introduction of the "pan-European land-based public radio paging service" known as "ERMES". Since then, use of this band for ERMES in EU Member States has significantly decreased or ceased.

5.2 Recognising that this spectrum may be better used, the Commission mandated CEPT to examine future possible uses. In particular, the Commission was interested in applications that could provide for the needs of specific social groups, such as the hearing impaired and people requiring urgent assistance.

5.3 In response to the mandate, CEPT produced a new frequency plan and channel arrangement, allowing six types of preferred applications to share the band in order to meet several EU policy needs. The identified applications are:

- hearing aids. People suffering from a hearing disability would benefit from a harmonised radio spectrum band in terms of improved travelling conditions between Member States and reduced equipment cost due to economies of scale;
- social alarms. The development of an internal market for social alarms that would e.g. allow elderly or disabled people to call for assistance;
- asset tracking or tracing devices. These devices would assist in tracking and recovering stolen goods across the EU;
- meter reading systems used by utility companies;
- existing paging systems such as ERMES; and
- private mobile radio systems when employed for temporary use.

5.4 The Commission reflected CEPT's recommendations for the future use of this band in Decision 2005/928/EC of 20 December 2005 on the harmonisation of the 169.4-169.8125 MHz frequency band in the Community" [14]. The Decision repeals the 1990 Directive on ERMES and requires Member States to make spectrum available in line with the CEPT plan, as reflected in the Decision. As the relevant authority in the UK, we must implement the Decision.

5.5 The Decision divides the band into two parts divided by a 12.5 kHz 'guard band':

- a lower power part (169.4 -169.6 MHz); and
- a higher power part (169.6125 - 168.8125 MHz).

[14] Available at http://eur-lex.europa.eu/LexUriServ/site/en/oj/2005/l_344/l_34420051227en00470051.pdf.

5.6 Our proposal deal only with implementing authorisation arrangements in the UK for relatively higher power (500 mW) Asset Tracking[15] & Meter Reading[16] apparatus in the low power part of the spectrum covered by the Decision. The Decision requires that the high power part of the band accommodate high power transmitters for tracing and asset tracking systems, paging systems, and also the possible alternative applications of tracing, paging, temporary use and private mobile radio communications. The Decision does, however, provide for the continued use of the band by paging and private mobile radio applications not in conformity with the Decision if they were already authorised at the time the Decision was made. We are currently examining how best to use this spectrum in compliance with this Decision and will announce plans in the future.

5.7 For the low power part of band, the Decision directs that the "least onerous" authorisation system should be adopted when implementing the Decision. As the equipment covered by the Decision operates at low powers on a non-interference, non-protected basis and covers devices that are produced for the mass market, licensing such devices would lead to a significant cost to both licensees and us, whereas licence-exemption would be unlikely to create undue interference. The devices identified in the Decision are therefore suitable candidates for licence-exemption.

Proposal details

5.8 The Decision contains a detailed band plan and channelling arrangement that we are proposing to reflect in UK exemption arrangements.

5.9 A summary of the frequencies available for the Meter Reading & Asset Tracking for the low power part of the band can be found at Figure 1.

5.10 Article 3(5) of the Decision limits the maximum permissible power in the low power part of the band to 500 mW effective radiated power (e.r.p.). The article also specifies the maximum duty cycle[17] for Meter Reading and Asset Tracking systems at <10 % and <1% respectively. The different duty cycles are due to the assumed density of users for these devices being different. To minimise the potential for interference, the duty cycles are differernt.

5.11 However, much work has been done on this subject within CEPT, and CEPT Recommendation 70-03 (as updated 9 February 2007) contains recommendations on appropriate parameters for Meter Reading & Asset Tracking. These parameters limit maximum power to 500 mW (e.r.p.). We propose to use these parameters to define the characteristics of equipment that will be exempt from licensing in our implementation of the Decision.

5.12 In the Wireless Telegraphy (Exemption) (Amendment) Regulations 2006 we authorised the use of Meter Reading & Asset Tracking but with a maximum power limitation of 10 mW in line with other applications using the band. The consultation on these regulations noted that this would enable early access to this spectrum for these applications while minimising the risk of interference to other users of the spectrum. We recognised that this limitation might restrict the use of these bands for the moment but believed it prudent to await CEPT's recommendations prior to allowing more liberal technical constraints.

[15] Systems that allow the tracing and tracking of goods, leading to their recovery.
[16] Systems that allow remote status monitoring, measuring and service commands.
[17] Maximum duration of time for which a device can transmit within a set period.

5.13 For all equipment covered by the Decision a harmonised standard EN 300 200 is available. Compliance with this standard will provide an assumption of conformity with the R&TTE Directive.

5.14 Figure 1 details our proposal for the appropriate technical constraints required to effectively implement the Decision. We will continue to review, and may from time to time modify, these characteristic with the aim of ensuring the most efficient use of the available spectrum possible.

Figure 1: Proposals for Implementation of Commission Decision 2005/928/EC.

Application	Frequency Band (MHz)	Maximum Permitted Radiated Power (erp)	Channel Bandwidth (kHz)	Duty Cycle	Reference Standard
Meter Reading	169.400 - 169.475	500 mW	12.5	<10%	EN300220
Asset Tracking	169.400 - 169.475	500 mW	12.5	<1%	

Impact

5.15 The available spectrum is currently not used by radio services, other than those permitted in Decision 2005/928/EC. The lower duty cycle limitation for Asset Tracking is required to ensure that interference to permitted hearing aids is unlikely, noting that a burst of radio signals from Asset Tracking is likely to last longer than the signals from Meter Reading equipment and could appear as a nuisance to Hearing Aids without this restriction. With these technical limitations, we believe that the impact on other spectrum users will be minimal.

Benefits

5.16 SRDs are typically mass-market and/or portable products that can easily be taken and used across borders. Differences in spectrum access conditions therefore prevent their free movement, increase their production costs and create risks of harmful interference with other radio applications and services. In addition the UK is required to implement the Commission Decision.

Implementation

5.17 IR2030 will be updated to reflect the changes outlined.

Question 3) Do you agree with our proposal to allow an increase in power for Meter Reading & Asset Tracking licence-exempt devices in the 169.4 - 169.475 MHz band to 500mW?

Section 6

Commission Decision on Short Range Devices and Related Changes

Background

Short Range Devices

6.1 SRDs is a generic term for devices that transmit at low powers and consequently operate over quite short ranges. They operate in a wide range of frequencies band and are used for a wide range of applications.

Commission Decision on Short Range Devices

6.2 We expect the Commission to adopt a draft update[18] to the Decision entitled "Commission Decision establishing a framework for the harmonisation of radio spectrum for use by short-range devices in the Community" (the "SRD Decision"). The Decision will require Member States to permit the use of equipment meeting the requirements of, and operating in, the frequency bands specified in that Decision.

6.3 The frequency bands and equipment that the Decision identifies are primarily those that already benefit from voluntary harmonisation across Europe though CEPT. In the most part they are reflected by existing arrangements within the UK.

6.4 The Decision is expected to require Member States to make available the identified frequency bands on a non-exclusive, non-interference and non-protected basis for the types of devices and subject to the specific conditions set out in the annex to the Decision.

6.5 In the UK, we are the relevant authority responsible for implementing the Decision. As the equipment covered by the draft Decision operates at low powers on a non-interference, non-protected basis and covers devices produced for the mass market, We believe that licensing such devices is generally impractical. The devices identified in the draft Decision are therefore appropriate candidates for licence-exemption. Having examined the existing arrangements for licence exemption in the UK, we believe that the existing Exemption Regulations deal with SRDs in a way that is already largely compliant with the Decision. There are, however, a number of minor changes that we will need to make to bring the UK fully in to line with the draft Decision once it is adopted.

6.6 The Exemption Regulations are generally consistent both with the draft SRD Decision and with a range of harmonisation measures we have taken voluntarily to align with other CEPT countries. These are reflected in CEPT Recommendation 70-03, which details the spectrum identified for SRDs within Europe and formed the basis for the SRD Decision. This is regularly updated to reflect the changing needs of the industry and changes in spectrum availability. The Recommendation contains a number of annexes identifying spectrum that has been designated for certain types of SRD. It also contains an appendix in which administrations can list those parts of the Recommendation that they have not implemented, or where additional national restrictions apply.

[18] Draft revised annex to Commission Decision 2006/771/EC. Available at www.ero.dk.

Proposal details

6.7 These changes will all be made to the updated interface requirement (IR2030) which is referred to in the Exemption Regulations. The current version of IR2030 can be found on the Ofcom website[19].

6.8 The proposed changes are as follows:

- to remove the restriction on airborne use for all SRD allocation listed in the SRD Decision as amended;
- non-specific SRD - remove FM only restriction and allow digitised audio in the 27MHz and 40 MHz bands;
- add existing inductive allocations in the 6, 13 and 27 MHz Industrial, Scientific and Medical (ISM) bands to the Non-Specific allocations;
- non-specific SRD - add 863 - 870 MHz 25 mW allocation with low duty cycle (0.1%) or LBT;
- non-specific SRD - add existing Movement Detection allocation at 24.15 - 24.25 GHz;
- non-specific SRD - add new allocation at 61 - 61.5 GHz 100mW;
- alarm systems - reduce duty cycle restriction from 0.1% to 1.0% in the 868.6 - 868.7 MHz band;
- inductive applications - add new allocation 1600 kHz - 2 MHz at the very low power level -15 dBµA/m measured at 10 m in a 10 kHz bandwidth;
- inductive applications - remove loop antenna restriction for all inductive SRD allocation listed in the SRD Decision as amended; and
- active medical implants - allow a less stringent (by 6dB) power restriction in the 185 - 315 kHz band of 30 dBµA/m measured at 10 m.

6.9 We expect the above changes to fully implement the draft Decision in its current form. We do not expect the draft Decision to change before it is finalised. However, should this happen we will amend the proposals as appropriate in order to implement the Decision.

6.10 In view of the above the following minor changes are proposed to the Exemption Regulations that better align UK arrangements with Recommendation 70-03 where this has not been achieved in relation to the changes proposed in relation to the SRD Decision. The references are to the tables in IR2030:

- table 3.4: medical and biological applications - amend the reference from EN 300 220 to the recently introduced EN 302 510 in the 30 - 37.5 MHz band;
- table 3.4: medical and biological applications - a new allocation of Ultra Low Power in the 401 - 402 MHz and 405 - 406 MHz bands at 25µW, 25 kHz bandwidth and low duty cycle 0.1% or LBT. These medical devices present a low

[19] http://www.ofcom.org.uk/radiocomms/ifi/tech/interface_req/uk2030.pdf

risk of interference to the Meteorological, Satellite, Fixed and Mobile services in these bands due to the very low power and polite spectrum access techniques employed;

- table 3.7: railway applications - remove the set channel arrangements (i.e. the fixed centre frequency requirements at 2447.0 MHz, 2448.5 MHz, 2450.0 MHz, 2451.5 MHz and 2453.0 MHz) in the 2446 - 2454 MHz band. The maximum permitted channel bandwidth remains unchanged at 1.5 MHz for each channel. The proposal is merely to remove the fixed centre frequency requirements. Limited impact is envisaged as this allocation is limited to railway applications that are already licence exempt, operated under the control of rail network operators;

- table 3.7: railway applications - correct the allocation for railway applications operating at 4516 kHz from the incorrect 4515 kHz, to align with the correction in Recommendation 70-03;

- table 3.20: model control - amend error in note (d) to correctly relate to Category vi. Instead of reading “In category v channel numbers 1 to 40…” it will correctly read “In category vi channel numbers 1 to 40…” ;

- table 3.21: radio microphones - add a reference to EN 300 442 for services categories i and ii and a reference to EN 301 357 for services in category iii;

- table 3.21: radio microphones - remove channel restriction of 200 kHz in 863-865 MHz band to align radio microphones to the current wireless audio allocation which has no channel restrictions (see table 3.23);

- table 3.21: hearing aids - remove references to the generic standard EN 300 220, while leaving the reference to the specific standard EN 300 422; and

- table 3.28: Radar Level Gauge - insert omitted mW radiated level in the 10.7 - 10.850 GHz band. Instead of reading ”≤25 Peak” it will read “≤25 mW Peak”.

6.11 The SRD Decision stresses the need to review the bands and devices it covers on a regular basis to take account of the evolution of technologies in the market. Consequently a review of the annex to the Decision will be carried out by the Commission at least once every year and we plan to implement any changes that arise following further appropriate consultation.

Impact

6.12 The impact of these changes is limited as we do not consider that there will be an increased risk of undue interference.

Benefits

6.13 SRDs are typically mass-market and/or portable products that can easily be taken and used across borders. Differences in spectrum access conditions can prevent their free movement, increase production costs and create risks of harmful interference with other radio applications and services. These proposals impose the minimum necessary restrictions on permitted uses, and extend the principle of technology neutrality by extending the range of applications that can make use of bands available for SRDs.

6.14 Aligning with Recommendation 70-03 will impose limited additional restrictions but will enable any potential benefits form harmonisation. Therefore we have sought to align with Recommendation 70-03 where appropriate and where national frequency management considerations permit.

Implementation

6.15 Suitable amendments will be made to the Exemption Regulations and IR 2030 will be updated to reflect the changes outlined.

Question 4) Do you have any comments on our proposals to align with the draft Commission Decision relating to SRDs?

Section 7

Land Mobile Satellite Services

Background

7.1 Mobile Satellite Services (MSS) are portable terminals that enable users to transfer data and voice information using satellite communications networks. The most common type of application for these devices is satellite phones and satellite broadband connections.

7.2 Within MSS there are a number of categories of use: land, maritime and aeronautical. This proposal is only concerned with the equipment exemptions covering Land MSS (LMSS) in the Exemption Regulations and UK Interface Requirement IR2016.

7.3 Currently, the Regulations for LMSS exemption, list equipment by manufacturer and type. The Regulations refer to the manufacturer's brand name of the device and not the generic name of the European harmonised standard used to define the technology. Each time a manufacturer produces a new product type, We update the Regulations in order to licence-exempt product type. IR2016 duplicates this manufacturer information.

Proposal details

7.4 We propose to simplify the equipment listings in Schedule 5 part IV of the Exemption Regulations and within IR2016 Annex A, without changing the status of the terminals, which are currently licence-exempt and will remain so following this exemption proposal.

7.5 We will remove the references to specific equipment types from the Regulations and IR2016. In its place, we will quote the appropriate ETSI standard with the corresponding frequency and maximum transmit power requirements.

Impact

7.6 Since the equipment listed is already licence-exempt and the changes are to simplify the listing and not change the equipment exempt situation, we are not aware of any negative impact from the implementation of this proposal.

Benefits

7.7 The proposed changes to this documentation simplifies the listing of equipment by covering the majority of the specific equipment types with a general ETSI standard or other Common Technical Regulation, thus reducing the number of products listed and the requirement for us to update the list every time a new product is produced.

7.8 With any change in Regulations, we are required to consult on the new proposals. This places unnecessary burdens on both us and the manufacturer wishing to place its equipment onto the market. This should reduce the time taken for new products to be deployed in the UK.

Implementation

7.9 The Exemption Regulations will be updated to reflect the changes to the referenced LMSS equipment.

7.10 IR2016 will be updated to reflect the changes outlined in this section.

Question 5) Do you have any comments on our proposal to simplify the LMSS equipment listings in the Exemption Regulations and IR2016?

Annex 1

Consultation questions

A1.1 We would welcome comments or views on any aspect of this consultation document by **27 November 2007**. In particular:

Question 1) Do you agree with our proposal to permit the licence- exempt use of BMA devices in specific spectrum bands using UWB technology?

Question 2) Do you agree with our proposal to exempt users of HDFSS operating with e.i.r.p. no greater than 50 dBW in the 27.50-27.8185 GHz, 28.4585-28.8265 GHz and 29.4625-30 GHz bands from the need to possess a WT licence?

Question 3) Do you agree with our proposal to allow an increase in power for Meter Reading & Asset Tracking licence-exempt devices in the 169.4 - 169.475 MHz band to 500mW?

Question 4) Do you have any comments on our proposals to align with the draft Commission Decision relating to SRDs??

Question 5) Do you have any comments on our proposal to simplify the LMSS equipment listings in the Exemption Regulations and IR2016?

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 an RIA as defined by section 7 of the Communications Act 2003 ("the Communications Act") for amending the Wireless Telegraphy (Exemption) Regulations 2003.

A2.2 You should send us any comments on this RIA 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 Communications Act, which means that we 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 our activities. However, as a matter of policy we are 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 Communications Act, in producing this RIA, we have had regard to such general guidance as we consider 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 UK, we are responsible for the authorising of civil use of the radio spectrum and achieve this by granting wireless telegraphy ("WT") licences under the Wireless Telegraphy Act 2006 (the "WT Act") and by making Regulations exempting users of particular equipment from the requirement to hold such a licence. Under section 8(1) of the WT Act, it is an offence to install or use equipment to transmit without holding a licence granted by us, unless the use of such equipment is exempted. However under Section 8(4) of the WT Act we must make regulations to exempt equipment if it is unlikely to cause undue interference

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 no.74) ("the existing Regulations"). This update will be achieved through an amendment to the existing Regulations. The changes proposed fall into the following four categories:

- measures to permit the use of a range of new technologies and novel applications of radio without the need for users to obtain a licence from us -

- Building Material Analysis devices using Ultra Wide Band technologies; and
- High Density applications in the Fixed Satellite Service (HDFSS);

- measures to amend the use of licence-exempt Meter Reading & Asset Tracking devices;
- measures to harmonise with Europe where such measures are viewed as beneficial; and
- measures to simplify the regulatory process.

The citizen and/or consumer interest

A2.6 We take account of the impact of our decisions upon both citizen and consumer interests in the markets we regulate. 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 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 our customers;

ii) licence-exemption is proposed only in areas where use of equipment is unlikely to cause harmful interference to other spectrum use; and

iii) they support the introduction of new and innovative technologies that will be of benefit to consumers in general and specifically measures that address social groups such as the elderly and the hearing impaired.

Our policy objective

A2.7 We seek wherever possible, to reduce the regulatory burden upon our stakeholders, in this instance users of the radio spectrum. One way in which we 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 8(1) of the WT 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. However under section 8(4) of the WT Act we must make Regulations to exempt equipment if it is unlikely to cause undue interference. 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) that 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, we aim 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. We are is also required to implement European Union legislation (usually 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 types of licence-exemption measure considered in this set of regulations fall into two categories:

i) implementation of European Commission ("Commission") Decisions (typically changes to existing exemption requirements in all but one case) that require allocation of specified spectrum bands to short range devices (SRDs); and

ii) removing regulatory burdens on stakeholders.

A2.10 We are required to implement Commission Decisions by law. Therefore for the first category of measures, we have merely identified the potential benefits of implementing the measures and assessed their potential impact on the costs for business and for us.

A2.11 With regard to the second category, we have has three potential options:

i) not to authorise use;

ii) to authorise use through the issue of a WT licence; or

iii) to authorise use through exemption from the need to hold an individual WT licence.

A2.12 The approach we have taken to analysing these options is as follows. First we consider, where relevant, the first option of not authorising use of the spectrum versus authorising use. This relates to balancing judgements about the potential future uses of the band and the value of the uses that would be authorised (potentially via licence-exemption). Such judgements typically require assumptions to be made about potential future uses of each band and the potential markets (and producer and consumer benefits) that may arise from licence-exempt use. Quantitative estimates for the bands in question would involve significant uncertainty and are unlikely to give a robust basis for analysing this option. Instead Our approach has been to gather available information on the potential demand from other uses for the spectrum and make qualitative assessments of the relative benefits and costs of not authorising use of the spectrum.

A2.13 Secondly we consider the question of whether to authorise use through issuing a licence or through exemption. Generally, taking a licence-exempt approach over a licensed approach involves a reduction of the regulatory burden in the use of these bands. Our analysis takes this proposition as starting point and then focuses on whether there might be concerns over whether existing users in the band (if there are any) or potential new users might suffer harmful interference as a result of the decision to licence exempt. In theory this could negate the benefits of reductions in the regulatory burden.

Analysis of options

Implementing Commission Decisions

A2.14 The table below presents our analysis of the first category of measures where we are merely proposing to implement Commission Decisions relating to licence-exemption for SRDs. For each measure we identify the potential benefit associated with the measure. For example liberalisation may encourage service innovation and

benefit both businesses and consumers. We also assess the risk of other users being affected by the proposal, in terms of the potential to create congestion or undue interference with other users. In comparison to the alternative of authorisation through licensing, the measures listed below also bring the benefit of reducing the administrative burden on both companies and on us.

Assessment of costs and benefits of implementing EC Decisions on SRDs

Device	Description of exemption	General benefit of change	Potential costs
All SRDs	To remove the restriction on airborne use for all SRD allocation listed in Decision (the "SRD Decision") as amended.	Implement the SRD Decision as amended This is a liberalisation measure on the permitted use of existing licence-exempt equipment. Many potential uses of SRDs would be enabled as a result of this measure. Moreover, the control and use of UK authorised SRD in airborne environments will now rest with the owners and operators of aircraft who may utilise these technologies as they see fit. One example of the potential benefits is a proximity warning device for gliders and soarplanes. Such devices are widely used in Europe and have the potential to reduce accidents, collisions and consequent loss of life. According to the British Gliding Association they could virtually eliminate mid-air collisions of non-commercial aircraft and helicopters if they were to have a similar effect to that since their introduction and widespread adoption in the Alpine region of Europe in 2004.	The costs of this measure are expected to be low. All SRDs have a limitation on range due to their relatively low power, which curtails the potential to cause interference to other users. Some SRDs have a very limited range indeed, such as medical implants. Other SRDs are either operating in bands where the only type of other authorised apparatus is other SRDs, or they operate in the internationally recognised, Industrial, Scientific & Medical (ISM) bands, where ISM machinery is currently permitted to operate without height restriction. It is therefore considered that the present restriction on airborne use is unnecessary and adds little to protecting from interference. Moreover, the European Conference of Postal and Telecommunications Administrations (CEPT) has studied the potential for interference and concluded (in the 30 May 2007 issue, of the ERC Recommendation on SRDs, ERC Rec 70-03 that such use should be allowed and that aviation safety aspects should remain the responsibility of aircraft manufacturers/owners consulting with the relevant national or regional aviation bodies.
Non-Specific SRD	Remove FM only restriction and allow digitised Audio in 27MHz and 40 MHz bands	Implement the SRD Decision as amended 27 MHz – Non-specific SRD equipment is already licence exempt, albeit in the regulations governing inductive applications. This liberalisation measure gives users the added benefit of greater flexibility, making explicit that an equivalent Electric field (E-Field) power limitation may also be applied.	27 MHz – No risk is foreseen from this liberalisation measure because the proposed E-field limitation corresponds to the currently permitted H-field (magnetic field) inductive power limitation. 40 MHz – We do not expect significant use due to the limited allocation of 40 kHz. Therefore the

Device	Description of exemption	General benefit of change	Potential costs
		40 MHz – The liberalisation measure brings the benefit of allowing other forms of modulation in this band, which may allow innovative audio communications to be developed. However, we expect that use of the band may be limited due to the small amount of spectrum available - 40 kHz.	likelihood of interference or congestion appears low.
ISM bands to the Non-Specific allocations	Add existing inductive allocations in the 6, 13 and 27 MHz ISM bands to the Non-Specific allocations	Implement SRD Decision as amended This measure broadens the range of permitted SRD uses in these bands. We expect benefits from this liberalisation measure to be incremental in nature since licence-exempt equipment is already allowed in the band.	Costs are likely to be low since licence-exempt equipment is already allowed in the band. The measure purely includes generic Inductive devices within the generic SRDs permitted to be used in these bands.
Non-Specific SRD	Add 863 - 870 MHz 25 mW allocation with low duty cycle (0.1%) or LBT.	Implement SRD Decision as amended This allocation will permit the deployment of innovative communications devices, previously barred from most, low bandwidth, SRD allocations, and could benefit manufacturers, business and consumer users.	Since the equipment covered by this measure is capable of using wide-band modulation techniques within the band limits and subject to the polite protocol, the likelihood of undue interference to other radiocommunications services, or of increased congestion affecting the performance of existing SRDs is low.
Non-Specific SRD	Add existing Movement Detection allocation at 24.15 - 24.25 GHz	Implement SRD Decision as amended The benefit of this liberalisation measure is to allow a much broader range of devices (Non-Specific SRDs as opposed to movement detection SRDs) to operate in the band than before. Frequency bands such as the 24 GHz band are well suited to movement detection type applications.	We are proposing that the power limit for movement detection SRDs be much lower (-13 dB) than for existing applications in this band. Therefore, although the scope of equipment that can be used in this band is being widened, We expect that the risk of additional interference arising is low.
Non-Specific SRD	Add new allocation at 61-61.5 GHz 100mW.	Implement SRD Decision as amended There is as yet no ETSI Standard for this apparatus, though ETSI is in the early stages of developing a Standard EN 305 550, a generic standard for the frequency band 40 - 125 GHz. Firms are considering developing products in areas such as radio Local-Area Networks (LANS), communications links, and	The combination of the frequency band and power limits will result in a very low power and short range, thus there is little likelihood of interference with other existing or potential licensed services operating at higher powers. Moreover, our Licence-Exemption Framework Review identified that, demand for access to

Device	Description of exemption	General benefit of change	Potential costs
		road safety, although such initiatives are in their early stages.	spectrum decreased in higher frequency bands and that consequently, there was little chance of congestion from licence-exempt apparatus.
Alarm Systems	Reduce duty cycle restriction from 0.1% to 1.0% in the 868.6 - 868.7 MHz band	Implement SRD Decision as amended This liberalisation measure will bring the UK in line with the recently amended CEPT Recommendation on SRDs. Potential innovators may benefit from the opportunity to take advantage of the measure and develop equipment that can transmit over a greater time in any period, up to 36 seconds per hour rather than 3.6 seconds.	The change in duty cycle from 0.1 % to 1 % of the time will still enable a large number of SRDs to communicate in a given area. Moreover, in 2006, We undertook measurements[20] of frequency bands utilised by SRDs. These comprehensive measurements indicate that the actual average utilisation of the band required by SRDs is low. Therefore the risk of congestion and the impact on other potential services appear low.
Inductive Applications	Add new allocation 1600 kHz - 2 MHz at the very low power level, -15 dBµA/m measured at 10 m in a 10 kHz bandwidth.	Implement SRD Decision as amended This measure would introduce a new allocation of spectrum for the use of inductive apparatus using the 9 kHz - 30 MHz band. The power limit is very low. However it would permit the use of Near Field Connectivity (NFC) devices suitable for technologies such as entry control, where proximity to an identity reader is essential or desirable; i.e. the benefit would be providing another band that such devices could use.	This NFC allocation is very low power. Other Inductive allocations within the existing Regulation permit far higher power (10 to 1,000 times) limits. Hence, although, this band is currently allocated to a number of civil and military applications, notably radio navigation aids, the nature of these NFC devices makes the likelihood of any interference to these services very low.
Inductive Applications	Remove loop antenna restriction for all Inductive SRD allocation listed in SRD Decision as amended.	Implement SRD Decision as amended This liberalisation measure may benefit users of radio location equipment by allowing the authorisation of equipment that uses a Field-Effect radio signal. The applications would use technology similar to touch screen technology but using variations in an electro-magnetic field to determine location.	This change is largely administrative and is not expected to carry any risk of impacting on other spectrum users. The services would be very low power and very short range. Moreover, for the frequency bands in question, it would be difficult to create effective E-field (as opposed to H-field) inductive applications. This is because conventional E-field radio antennae are necessarily large, e.g. antennae tend to be

[20] Autonomous Interference Monitoring System- Phase II & Measurement of LE Usage project http://www.ofcom.org.uk/research/technology/overview/state_use/aims2/le_summary.pdf

Device	Description of exemption	General benefit of change	Potential costs
			sized as a function of wavelength and the wavelength at 1 MHz is 300 metres.
Active Medical Implants (AMI)	Allow a less stringent (by 6dB) power restriction in the 185 - 315 kHz band of 30 dBμA/m measured at 10 m	Implement SRD Decision as amended This liberalisation measure is for a slight increase in power over a proportion of the band used by AMI. It therefore creates scope for innovation in the development of use of AMI, benefiting manufacturers and citizens. UK users should also benefit from the European harmonisation involved in this measure, which will enable active medical implants to work effectively across the EU.	The liberalisation of the power limits, over part of the band proposed for AMI (9 - 315 kHz) is consistent with the CEPT Recommendation on SRD, hence the likelihood of interference or impact to other spectrum users is low.

A2.15 In summary, we consider that implementing the measures listed above is likely to generate a net benefit for UK businesses and consumers. In the unlikely event that the new opportunities were not taken up, our view is that the outcome would at worst be neutral, since the risks of creating interference to other users are likely to be low.

Removing regulatory burdens

A2.16 The two tables below present our analysis of the second category of measures which deal with proposals that remove regulatory burdens on spectrum users. In contrast to the first category, we are not required to implement them following EU legislation. The first table considers the arguments for authorising versus not authorising the use proposed. The second table considers the arguments for authorisation through licence-exemption compared to the alternative of licensing.

A2.17 In considering whether use should be authorised or not, we assess the potential demand for the spectrum from alternative uses and whether licence-exemption could mean that potentially more valuable uses could be excluded from the spectrum.

A2.18 In comparing the merits of authorisation through licence-exemption versus licensing, we assess the potential benefits associated with the licence-exemption and the risk of other users being affected by the proposal. Similarly to the first category of measures, all the proposals listed below also bring the benefit of reducing the administrative burden on both companies and on us.

Assessment of costs and benefits of authorising vs. not authorising use

Device	Description of exemption	General benefit of authorising	Potential costs
Low-power satellite earth stations (e.g. HDFSS, VSAT)	Extend licence exemption in band 29.4625 - 30 GHz for low power stations.	Benefits business by promoting the availability of broadband and multimedia services in rural areas. Brings the UK into line with other countries that have adopted ECC/DEC(05)01.	There is little evidence of current or future demand for the band from alternative uses. In principle, the band could be used for Broadband Wireless Access (BWA) services. However, we are already preparing to award spectrum in the bands 10, 28, 32 and 40 GHz and initial indications are that this is likely to be sufficient to meet demand for BWA use in these frequency ranges.
Building Material Analysis (BMA) devices using Ultra-Wideband (UWB) technology	The use of BMA does not fall under the Wireless Telegraphy (Ultra-Wideband Equipment) (Exemption) Regulations 2007 as this application is specific to accurate imaging applications where different technical requirement is required.	Implement ECC Decision (07)01 This measure will enable BMA devices to be used since development of this market will depend on the high accuracy and reliability provided by UWB systems. It will bring direct benefits to business users in a number of activities such as workplace building projects and security services. In addition, consumers will be able to use such devices for home DIY applications, though the market is expected to be focused on professional users.	BMA devices operate as an underlay technology. Therefore provided that they do not cause interference to other spectrum users, authorising their use should not impose an opportunity cost on society. Moreover, we consider that the potential for these devices to cause interference is limited because BMA devices are expected to be used for very short durations and are not expected to be mass market devices.
Land Mobile Satellite Services	Proposal to simplify the equipment listings in the existing Regulations (Schedule 5 part IV) and the UK IR2016 Annex A, without changing the status of the terminals.	This measure removes the need to amend the existing Regulations each time a company launches a new product in the relevant spectrum bands. Manufacturers will benefit from being able to bring their product to the market more quickly.	This is an administrative measure and is unlikely to affect actual spectrum usage. Therefore it is unlikely to generate any costs save for our implementing the measure.
Meter Reading & Asset Tracking	Increase power from 10 mW to 500 mW in the 169.4 - 169.475 MHz band	Implement Commission Decision 2005/928/EC. This liberalisation measure is to increase the power limit for this category of uses to a level that will permit the effective operation of Meter Reading & Asset Tracking apparatus. Hence, businesses using these types of applications could see significant benefits.	Commission Decision 2005/928/EC has already allocated the band exclusively to specified SRD technologies. Therefore it is unlikely that the spectrum will be used for other purposes so the opportunity cost to society in authorising this use is low.
Medical and Biological applications	Allocation of Ultra Low Power in the 401 - 402 MHz and 405 - 406 MHz bands at 25μW, 25	Medical Devices benefit most from allowing the mobility of users and consequent harmonisation of the radio spectrum needed for successful operation	These medical devices present an extremely low risk of interference to the Meteorological, Satellite, Fixed and Mobile services in these

Device	Description of exemption	General benefit of authorising	Potential costs
	kHz bandwidth and low duty cycle 0.1% or LBT.		bands due to the very low power and polite spectrum access techniques employed. The potential costs are considered to be low
Railway Applications	Remove set channel arrangements in the 2446 - 2454 MHz band. The maximum permitted channel bandwidth remains unchanged at 1.5 MHz for each channel	Removal of unnecessary constraints on the channel plan within the allocated band. This proposal brings the UK allocation in line with the European Recommendation for SRD. In addition it does not stop operators from continuing to use their equipment as they were before.	The equipment is already licence exempt. This change simply allows greater flexibility. The cost if co-ordination is expected to be low as this allocation is limited to railway applications, operated under the control of rail network operator who can self co-ordinate.
Radio Microphones	Remove channel restriction of 200 kHz	Align radio microphones to the current Wireless Audio allocation	Radio microphones, could already take advantage of the generic allocation to Wireless audio allocation and this is a relaxation of the rules, therefore it is unlikely to generate any costs save for our implementing the measure
Railway Applications	Correct the allocation for railway applications operating at 4516 kHz from the incorrect 4515 kHz	To align with the correction made to this in the European Recommendation 70-03.	The exemption was already in place for a centre frequency of 4515 kHz. Changing the centre frequency by 1 kHz is not expected to cause any additional harmful interference

Assessment of costs and benefits of licence exemption vs. licensing

Device	Description of exemption	General benefit of licence exemption	Potential costs
Low-power satellite earth stations (e.g. HDFSS, VSAT)	Extend licence exemption in band 29.4625 - 30 GHz for low power stations.	Reduces the regulatory burden on businesses. Brings the UK into line with other countries that have adopted ECC/DEC(05)01.	Licence-exemption is unlikely to generate a significant risk of harmful interference between low power satellite earth stations because of the low power nature of these services.
BMA devices using UWB technology	The use of BMA does not fall under the Wireless Telegraphy (Ultra-Wideband Equipment) (Exemption) Regulations 2007 as this application is specific to accurate imaging applications where different technical requirement is required.	Implement ECC Decision (07)01 Reduces the regulatory burden on the users of these services as they would not be required to obtain a WT Act licence from us.	Though BMA devices are more powerful than generic UWB devices, they are subject to a number of technical restrictions, designed to reduce the impact of these devices on other radio uses to a minimum. These include a politeness protocol (Listen Before Talk) and automatic safeguards to ensure the device only transmits when it is being used. Hence, we expect that licence-exemption for use of these services is unlikely to lead to a risk harmful interference arising between BMA users, or with other users.
Land Mobile Satellite Services	Proposal to simplify the equipment listings in the existing Regulations (Schedule 5 part IV) and the UK IR2016 Annex A, without changing the status of the terminals.	This measure removes the need to amend the existing Regulations each time a company launches a new product in the relevant spectrum bands. Manufacturers will benefit from being able to bring their product to the market more quickly.	This is an administrative measure and is unlikely to affect actual spectrum usage. Therefore it is unlikely to impose costs on other users.
Meter Reading & Asset Tracking	Increase power from 10 mW to 500 mW in the 169.4 - 169.475 MHz band	Implement Commission Decision 2005/928/EC. There is already licence-exempt equipment being used in the bands specified. Therefore the benefit of the measure arises from the greater flexibility that it enables.	CEPT completed studies in 2007 pursuant to the Commission Decision that allocated the band exclusively to these SRD applications. We are proposing to increase power levels to the level recommended by CEPT as being compatible with other radio services and SRD technologies. Hence, the impact to other radio services is expected to be low.
Medical and Biological applications	A new allocation of Ultra Low Power in the 401 - 402 MHz and 405 - 406 MHz bands at 25μW, 25 kHz bandwidth and low duty cycle 0.1% or LBT.	People and hence medical devices will able to move location without the need for any coordination or permit for use.	These medical devices present an extremely low risk of interference to the Meteorological, Satellite, Fixed and Mobile services in these bands due to the very low power and polite spectrum access techniques employed.

Device	Description of exemption	General benefit of licence exemption	Potential costs
Railway Applications	Remove set channel arrangements in the 2446 - 2454 MHz band. The maximum permitted channel bandwidth remains unchanged at 1.5 MHz for each channel.	There is already licence-exempt equipment being used in the bands specified. Therefore the benefit of the measure arises from the greater flexibility that it enables.	The proposal is merely to remove the fixed centre frequency requirements. No impact is envisaged as this allocation is limited to railway applications, operated under the control of rail network operators
Radio Microphones	Remove channel restriction of 200 kHz to align radio microphones to the current wireless audio allocation	There is already licence-exempt equipment being used in the bands specified. Therefore the benefit of the measure arises from the greater flexibility that it enables.	This change is for clarification only and to align to the Wireless Audio regulations presently existing so additional costs are limited.
Railway Applications	Correct the allocation for operating at 4516 kHz from the incorrect 4515 kHz	There is already licence-exempt equipment being used in the bands specified. This Brings the UK into line with other countries that have adopted the revised European Recommendation 70-03 The majority of the equipment that is designed to take advantage of this exemption is designed with a centre frequency of 4516 kHz	Licence-exemption is unlikely to generate a significant risk of harmful interference from this railway application because of the low power nature of these services.

A2.19 In summary, we consider that there is a good case for authorising the use proposed in each case. In particular, no compelling evidence has been found that there is likely to be current or future demand for the spectrum from other more valuable uses.

A2.20 We also consider that implementing the measures listed above is likely to generate a net benefit for UK businesses and consumers and at worst would have a neutral outcome (to the extent that benefits may depend on the uptake of the new opportunities afforded by each proposal). In particular, we consider that each measure is unlikely to impose costs on other users. Therefore if there is any benefit then the overall impact of each measure is likely to be positive.

Costs to business

A2.21 Our assessment of the potential costs to business from each of the proposed licence-exemption measures is detailed in the sections above under analysis of the options. Costs to business could arise insofar as the proposals impact on business use of the spectrum. However, for each of the proposed measures our view is that the potential impact on other users of the spectrum, in terms of the risk of interference or increased congestion, is low. Hence, we consider that each of the measures should impose very little cost on business.

A2.22 Moreover, costs to business are likely to be lower under a licence-exemption approach than the alternative of a licensed approach, since licence-exemption represents the least cost regulatory approach to the authorisation of spectrum use. For example if use of spectrum is authorised through a WT licence, businesses will face administrative costs associated with applying for the licence. Businesses could face additional costs depending on the method of award of the licence. If licences are awarded by means of an auction, businesses will face the costs (including management time) of participating in the auction. If licences are awarded on a first come first served basis, businesses will typically incur the administrative costs of the initial application and annual renewal of licences.

Costs to us

A2.23 There are one-off administrative costs associated with making a Statutory Instrument. We consider the implementation costs to be low, both in absolute terms and in comparison to licensing alternatives that might require an auction or the maintenance of an annually renewable licence scheme if licences are awarded on a first come first served basis. Moreover, the costs such as they are will also be offset by the benefits to business and consumer outlined above. There may also be a slight reduction in spectrum management costs in certain areas through licence exemption.

Annex 3

Responding to this consultation

How to respond

A3.1 We invite written views and comments on the issues raised in this document, to be made **by 5pm on 27 November 2007**.

A3.2 We strongly prefer to receive responses using the online web form at http://www.ofcom.org.uk/consult/condocs/wtle/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 5), to indicate whether or not there are confidentiality issues. This response coversheet is incorporated into the online web form questionnaire.

A3.3 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.

A3.4 Responses may alternatively be posted or faxed to the address below, marked with the title of the consultation.

Paul Chapman
Ofcom
Riverside House
2a Southwark Bridge Road
London SE1 9HA

Fax: 020 7981 3921

A3.5 Note that we do not need a hard copy in addition to an electronic version. We will acknowledge receipt of responses if they are submitted using the online web form but not otherwise.

A3.6 It would be helpful if your response could include direct answers to the questions asked in this document, which are listed together at Annex 1. It would also help if you can explain why you hold your views.

Further information

A3.7 If you want to discuss the issues and questions raised in this consultation, or need advice on the appropriate form of response, please contact Paul Chapman on 020 7981 3069.

Confidentiality

A3.8 We believe it is important for everyone interested in an issue to see the views expressed by consultation respondents. We will therefore usually publish all responses on our website, www.ofcom.org.uk, ideally on receipt (when respondents confirm on their response coversheet that this is acceptable).

A3.9 All comments will be treated as non-confidential unless respondents specify that part or all of the response is confidential and should not be disclosed. Please place any confidential parts of a response in a separate annex so that non-confidential parts may be published along with the respondent's identity.

A3.10 We reserve our power to disclose any information we receive where this is required to facilitate the carrying out of our statutory functions.

A3.11 Please also note that copyright and all other intellectual property in responses will be assumed to be licensed to us to use in order to meet its legal requirements. Our approach on intellectual property rights is explained further on our website at http://www.ofcom.org.uk/about/accoun/disclaimer/

Next steps

A3.12 Following the end of the consultation period, we intend to publish a statement in December 2007.

A3.13 Please note that you can register to receive free mail updates alerting you to the publications of relevant Ofcom documents. For more details please see: http://www.ofcom.org.uk/static/subscribe/select_list.htm

Our consultation processes

A3.14 We seek to ensure that responding to a consultation is as easy as possible. For more information please see our consultation principles in Annex 4.

A3.15 If you have any comments or suggestions on how we conduct our 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 we 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.

A3.16 If you would like to discuss these issues or our consultation processes more generally you can alternatively contact Vicki Nash, Director Scotland, who is our 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 4

Our consultation principles

A4.1 We have published the following seven principles that we will follow for each public written consultation.

We will seek to engage stakeholders before the consultation

A4.2 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.

We will be open and transparent during the consultation

A4.3 We will be clear about whom we are consulting, why, on what questions and for how long.

A4.4 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.

A4.5 We will normally allow 10 weeks for responses to consultations on issues of general interest.

A4.6 There will be a person within Ofcom who will be in charge of making sure that we follow our own guidelines and reach out to the largest number of people and organisations interested in the outcome of our decisions. This individual (whom we call the consultation champion) will also be the main person to contact with views on the way that we run our consultations.

A4.7 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” that needs their urgent attention.

Our decisions will take full account of responses

A4.8 We will look at each response carefully and with an open mind. We will give reasons for our decisions and an account of how the views of those concerned helped shape those decisions.

Annex 5

Consultation-response cover sheet

A5.1 In the interests of transparency and good regulatory practice, we will publish all consultation responses in full at www.ofcom.org.uk.

A5.2 We have produced a cover sheet for responses (see below) and would be very grateful if you could send one with your response. (It 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 where appropriate.

A5.3 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, we would encourage respondents to complete their cover sheet in a way that allows us to publish their responses upon receipt rather than wait until the consultation period has ended.

A5.4 We strongly prefer to receive responses via the online web form. If you are responding via email, post or fax, you can download an electronic copy of this cover sheet in Word or RTF format from www.ofcom.org.uk/consult/244504/.

A5.5 Please put in a separate annex any parts of your response that you consider should be kept confidential and include your reasons why this part of your response should not be published. 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 cover sheet 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

Please tick below what part of your response you consider is confidential, giving your reasons why.

Nothing	☐	Name/contact details/job title	☐
Whole response	☐	Organisation	☐
Part of the response	☐	If there is no separate annex, which parts?	

If you want part of your response, your name or your organisation not to be published, can we still publish a reference to the contents of your response (including, for any confidential parts, a general summary that does not disclose the specific information or enable you to be identified)?

DECLARATION

I confirm that the correspondence supplied with this cover sheet is a formal consultation response that Ofcom can publish. However, in supplying this response, I understand that Ofcom may need to publish all responses, including those which are marked as confidential, in order to meet legal obligations. If I have sent my response by email, Ofcom can disregard any standard email text about not disclosing email contents and attachments.

Ofcom seeks to publish responses on receipt. If your response is not 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)