OFFICE OF COMMUNICATIONS

Decision to make the Wireless Telegraphy (Exemption) (Amendment) (No.2) Regulations 2008

Statement

Publication date: 15 September 2008

Contents

Section 1

Summary

1.1 This statement confirms that, following a formal consultation, the Wireless Telegraphy (Exemption) (Amendment) (No.2) Regulations 2008 (the "Amendment Regulations") were made by us on 10 September 2008, and are coming into force on 1 October 2008**.** A copy of the regulations can be obtained through the Office of Public Sector Information (OPSI).[1]

1.2 The regulations exempt the use of:

- A number of Short Range Devices (SRDs) as set out in the European Commission Decision 2006/771/EC;[2] and
- High Density Fixed Satellite Applications (HDFSS) in the 27.5 - 27.8185 GHz, 28.4545 - 28.8265 GHz and 29.4625 - 30 GHz bands.

1.3 We have also amended the current licence exemption for the following equipment:

- Land Mobile Satellite Services (LMSS); and
- Social Alarms, Hearing Aids, Meter Reading, Asset Tracking devices in the 169.4 – 169.8125 MHz band.

1.4 We were required to comply with the European Commission Decision (the "EC Decision") the implementation of which is mandatory on all European Union (EU) Member States by 1 October 2008.

1.5 Before deciding to make the Amendment Regulations, in accordance with the requirements of section 122(4) of the Wireless Telegraphy Act (the "WT Act"), on 16 July 2008 we published a Statutory Notice[3] (the "Notice") containing a draft of the amendment regulations (the "Proposed Regulations") and invited comments from stakeholders.

1.6 We received four responses to our consultation. The respondents supported our regulations but requested further changes to our proposals. We have given consideration to all of the points which were raised and these are addressed in Section 3 of this document.

1.7 Having carefully considered the responses to the Notice we have decided to proceed with making the regulations to exempt the equipment from the need for a Wireless Telegraphy Act licence as described in this document.

1.8 A Regulatory Impact Assessment (RIA) is available in Annex 1 of this document. The RIA sets out the risks, costs and benefits of our decision and the effects that these will have on the costs to business, us and citizens/consumers.

1.9 A list of respondents is available in Annex 2.

[1] A link to the online version can be found at http://www.opsi.gov.uk/.
[2] Available at http://www.erodocdb.dk/Docs/doc98/official/pdf/2008432EC.PDF
[3] Available at http://www.ofcom.org.uk/consult/condocs/wtf_exp03/summary/main.pdf

Section 2

Introduction

Background

2.1 We are responsible for authorising the civil use of the radio spectrum and achieve this by granting wireless telegraphy licences under the Wireless Telegraphy Act 2006 ("WT Act") or 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. Under Section 8(4) of the WT Act we must make regulations to exempt equipment if its installation or use is unlikely to cause undue interference.

2.2 Exemption is realised by describing the details of equipment and the parameters under which it may be used in regulations that exempt users of such equipment from the need to hold a WT Act licence, provided they comply with the terms of those regulations.

2.3 On 18 September 2007 we consulted on the proposed changes to our licence exemption regulations, outlined below, in our document "Wireless Telegraphy Licence Exemption amending the Wireless Telegraphy (Exemption) Regulations 2003".[4] The consultation closed on the 27 November 2007. We received thirty-five responses to our proposals.

2.4 Following this consultation we published a statement "Amending the Wireless Telegraphy (Exemption) Regulations 2003"[5] published on 25 March 2008 that confirmed we would be making arrangements to change the regulations in line with the proposals outlined in the consultation.

2.5 In order to implement the our proposed changes and the Commission Decision, and in accordance with our statutory obligations, a draft of the regulations (the "Proposed Regulations") was published and subject to a one-month and a day consultation period. We considered this shorter time period was appropriate as we had already carried out a consultation on the policy aspects of the proposal. We consulted on the Proposed Regulations between 16 July 2008 and 17 August 2008 in the document "Notice of Ofcom's proposal to amend the Wireless Telegraphy (Exemption) Regulations 2003", available on the Ofcom website.[6]

2.6 We received four consultation responses on the Proposed Regulations and details of these are outlined in Section 3 along with our response. Annex 2 of this document provides a list of the respondents.

2.7 To implement the changes, we made a new Statutory Instrument, the Wireless Telegraphy (Exemption) (Amendment) (No.2) Regulations 2008 (the "Amendment Regulations").

[4] Available at http://www.ofcom.org.uk/consult/condocs/wtle/wtle.pdf
[5] Available at http://www.ofcom.org.uk/consult/condocs/wtle/statement/statement.pdf
[6] http://www.ofcom.org.uk/consult/condocs/wtf_exp03/summary/main.pdf

Equipment affected

2.8 We have made High Density Fixed Satellite Applications (HDFSS) exempt from licensing. HDFSS operating in the 27.5 - 27.8185 GHz, 28.4545 - 28.8265 GHz and 29.4625 - 30 GHz frequency bands will not require a licence providing that they comply with the technical specifications as set out in Interface Requirement (IR) 2066.[7] However, in order to ensure compatibility with avionic systems the Civil Aviation Authority (CAA) requires that prior to installation within the perimeter fence of airfields, permission is obtained from either the CAA or the appropriate Airport authority. Further information can be found in Annex A of IR 2066.

2.9 IR 2016 for Land Mobile Satellite Services (LMSS) has been changed and will no longer list equipment by manufacturer and product name. These will be replaced by the relevant ETSI Standard or Common Technical Regulation. This updated IR is referred to in the regulations.

2.10 In line with the guidance from the European Commission (EC) we have increased the maximum power limitation for Social Alarms, Hearing Aids, Meter Reading, Asset Tracking devices in the 169.4 - 169.8125 MHz band from 10 mW to 500 mW. The duty cycle limitations of ≤ 0.1% for Social Alarms was also removed. This is to further align with "Commission Decision of 20 December 2005 on the harmonisation of the 169.4 - 169.8125 MHz frequency band in the Community (2005/928/EC)".[8]

2.11 As a result of the changes that the EC have adopted as part of their annual revision to the EC Decision 2006/771/EC we have introduced the following changes for SRDs listed in "Commission Decision of 23 May 2008 amending 2006/771/EC on harmonisation of the radio spectrum for use by short-range devices (2008/432/EC)".[9] The changes are:

- All SRDs - removed the restriction on airborne use;
- Non-Specific SRDs – removed FM only restriction and allow digitised Audio in 26.957 - 27.285 MHz and 40.66 - 40.70 MHz bands;
- Non-Specific SRDs – added 25 mW allocations in the 863 - 870 MHz band with techniques to access spectrum and mitigate interference that provide at least equivalent performance to the techniques described in harmonised standards adopted under Directive 1999/5/EC must be used. This can include for example Listen Before Talk. Alternatively the specified duty cycle shown for the category may also be used;
- Non-Specific SRDs – allowed generic use of the band 24.15 - 24.25 GHz which was previously reserved for Movement Detection;
- Non-Specific SRDs – added a new allocation at 61 - 61.5 GHz at 100mW Equivalent Isotropically Radiated Power (e.i.r.p.);
- Non-Specific SRDs – allowed generic use of the bands 6.765 - 6.795, 13.553 - 13.567 and 26.957 - 27.283 MHz which were previously reserved for ISM;

[7] Available at http://www.ofcom.org.uk/radiocomms/ifi/tech/interface_req/draft_ir/draftir2066.pdf
[8] Available at http://www.erodocdb.dk/docs/doc98/Official/Pdf/2005928EC.pdf
[9] Available at http://www.erodocdb.dk/Docs/doc98/official/pdf/2008432EC.PDF

- Alarm systems – reduced the duty cycle restrictions from 0.1% to 1.0% in the 868.8 - 868.7 MHz band;

- Inductive Applications – added a new allocation at 1600 kHz - 2000 kHz at a power level of -15 dBμA/M measured at 10 m in a 10 kHz bandwidth;

- Inductive Applications – removed the loop antenna restrictions;

- Active Medical Implants – allowed a power of 30 dBμA/M measured at 10 m in the 185 - 315 kHz band; and

- Inductive Applications – increased the permitted power level in the 30 - 135 kHz band by up to 3 dB.

2.12 In addition to these mandatory requirements we have introduced the following changes to align the UK with the European Radiocommunications Committee (ERC) Recommendation 70-03 relating to the use of short range devices:[10]

- Medical and Biological Applications – added a new allocation at 25 μW with a 25 kHz bandwidth at 401 - 402 MHz and 405 - 406 MHz bands with a low duty cycle of 0.1% or techniques to access spectrum and mitigate interference that provide at least equivalent performance to the techniques described in harmonised standards adopted under Directive 1999/5/EC must be used. This can include for example Listen Before Talk;

- Medical and Biological Applications - amended the reference from EN 300 220 to the recently introduced EN 302 510 in the 30 - 37.5 MHz band;

- Railway Applications – removed the set channel arrangements in the 2446 – 2454 MHz band. Maximum channel bandwidth will remain at 1.5 MHz for each channel;

- Hearing Aids – removed references to the generic standard EN 300 220; and

- Radio Microphones – removed the channel restriction of 200 kHz.

2.13 Finally we made minor amendments to IR 2030:

- In tables 3.1 and 3.4, a measure to allow alternative mitigation techniques, other than the simple Duty Cycle or Listen Before Talk, so long as they meet the essential requirements of the R&TTE Directive;

- Removed the column titled Music or Speech;

- We amended the channel bandwidth in table 3.22 to make it more explicit that the limitation of 50 kHz is a maximum and that lower channel bandwidths are permitted;

- In table 3.12 for Inductive Applications relaxed the power limitations below 135 kHz by up to 3 dB;

- In table 3.1 for Non-Specific SRDs category (xi), amended text relating to the use of 418 MHz that became time expired on 1 January 2008. Also, included the

[10] Available at http://www.erodocdb.dk/docs/doc98/official/pdf/REC7003E.PDF.

correct limitations for Audio relating to the wideband 863 - 870 MHz band, category (xxiv);

- In table 3.7 for Railway Applications – corrected the frequency allocation from 4515 kHz to 4516 kHz;

- In table 3.20 for Model Control – amended the error in note (d) of Table 3.20 to correctly relate to category vi instead of category v;

- In table 3.21 for Radio Microphones, corrected the typographical error of the Reference Standard number to now read EN 300 422;

- In table 3.22 for Radio Hearing Aids, amended the title to align with the present harmonised European term, Assistive Listening Devices; and

- In table 3.28 Radar Level Gauge – inserted the omitted mW radiated level in the 10.7 - 10.850 GHz band. Instead of reading “≤25 Peak” it now reads “≤25 mW Peak”.

Section 3

Scope of Regulations

Responses to the Notice

3.1 We received four non-confidential responses concerning the Notice. These are all available on the Ofcom website.[11]

3.2 Three respondents commented on our proposals for exempting the use of HDFSS. All of the comments we received related to the policy, which we have already consulted on and made a decision as described in our regulatory statement.[12] The Statutory Notice published on 16 July 2008 sought to consult on the drafting of the regulations and not the policy proposals. Given the comments received, we have discussed below the reasons behind the policy decision.

3.3 The respondents requested that should consider that the e.i.r.p. of HDFSS be raised from 50 dBW to a minimum of 60 dBW. It was suggested that an e.i.r.p. of 60 dBW would be consistent with the upper level of provided for in CEPT Electronic Communications Committee (ECC) Decision ECC/DEC/(06)03,[13] which covers the satellite uplink bands 14.00 - 14.25 GHz and 29.5 - 30.0 GHz.

3.4 We are currently unable to licence-exempt satellite earth stations that transmit with an e.i.r.p. greater than 50 dBW in the 27.5 - 27.8185 GHz, 28.4545 - 28.8265 GHz and 29.4625 - 30 GHz bands because of the requirements to safeguard the use of other equipment that may be affected by such terminals in the UK. However, it is still possible to obtain authorisations for satellite earth stations that transmit with an e.i.r.p. greater than 50 dBW through normal licensing procedures. Nevertheless, we value these comments and continue to consider, with other stakeholders, ways of reducing regulation where possible.

3.5 A request was made that the band 28.8365 - 28.9485 GHz be included as part of the Proposed Regulations as per the ECC Decision (05)01.

3.6 The 28.8365 - 28.9485 GHz band has already been awarded on a technology and service neutral basis in the UK.[14]

3.7 Finally, we were requested to take into account the full ECC Decision (06)03 on high e.i.r.p. satellite terminals (HESTs) by allowing licence exemption in the band 14.00 - 14.25 GHz.

3.8 Because of frequency sharing issues we are currently unable to licence-exempt earth stations in the 14.0 - 14.25 GHz band. We have recently taken steps to reduce the regulatory burden for earth station networks in the 14.00 - 14.25 GHz band. This involved the retention of the network earth station licence but minimised the instances where clearance and registration of individual earth station terminals is required.

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[11] http://www.ofcom.org.uk/consult/condocs/wtf_exp03/responses/
[12] "Amending the Wireless Telegraphy (Exemption) Regulations 2003", published on 25 March 2008
[13] ECC Decision of 24 March 2006 on Exemption from Individual Licensing of high e.i.r.p. satellite terminals (HEST) operating within the frequency bands 10.70 - 12.75 GHz or 19.70 - 20.20 GHz space-to-Earth and 14.00 -14.25 GHz or 29.50 - 30.00 GHz Earth-to-space.
[14] http://www.ofcom.org.uk/consult/condocs/10-40notice/statement/statement.pdf

3.9 We also received another comment on our regulations relating to the changes we proposed to Land Mobile Satellite Services (LMSS) in IR 2016. The respondent proposed that IR2016 be amended and reference to ETS 300 733 be replaced with reference to EN 301 441. Also that the rows beginning: 'ETSI 300 733 using TDMA carrier modulation' and 'ETSI 300 733 using CDMA carrier modulation' be integrated, making the operational frequencies 1610 – 1626.5 MHz for uplink, and 1613.8 – 1626.5 MHz and 2483.5 – 2500 MHz for downlink.

3.10 These points relate to our policy on LMSS, not the content of the proposed regulations, therefore while we will consider the points raised carefully we will not be taking them forward in this document. We note that ETSI 300 733 is still an active ETSI standard.

Final scope of the Regulations

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

The Regulations

3.12 The Amendment Regulations which are proposed will make four amendments to the Exemption Regulations to include reference to the updated interface requirements and the addition of High Density Fixed Satellite Applications (HDFSS):

a) The first proposed amendment changes Regulation 3 to extend the number of equipment schedules to include HDFSS.

b) The second amendment updates the reference in Part III (interface requirement) for Schedule 7 (Land Mobile Satellite Services) to incorporate reference to the latest IR 2016 published by us on September 2008.

c) The third amendment updates the reference in Part III (interface requirement) for Schedule 6 (short range devices) to incorporate reference to the latest IR 2030 published by us on September 2008.

d) The fourth amendment inserts a new Schedule 11 in order to make High Density Fixed Satellite Applications exempt from WT Act licensing. The new Schedule includes reference to IR 2066 published by us on September 2008.

Annex 1

Impact Assessment

Introduction

A1.1 In accordance with Government practice, where a statutory regulation is proposed, a Regulatory Impact Assessment ("RIA") must be undertaken.

A1.2 The analysis presented here, represents an RIA as defined by section 7 of the Communications Act 2003 ("the Communications Act") for the Wireless Telegraphy (Exemption) (Amendment) Regulations 2008 (the "Amending Regulations").

A1.3 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

A1.4 In the UK, we are responsible for the authorising of civil use of the radio spectrum and achieve this by granting wireless telegraphy 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. Section 8(3) enables Ofcom to make regulations exempting equipment from the requirement to hold a licence subject to specified terms, provisions and limitations and under Section 8(4) of the WT Act we must make regulations to exempt equipment if it is unlikely to cause undue interference.

Proposal

A1.5 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 Primary Regulations"). This update will be achieved through an amendment to the Primary Regulations. The changes fall into the following four categories:

- measures to permit the use of new technologies and novel applications of radio without the need for users to obtain a licence from us -
    - High Density Fixed Satellite Applications (HDFSS);

- measures to amend the use of licence-exempt Social Alarms, Hearing Aids, and Meter Reading and Asset Tracking devices in the 169.4 – 169.8125 MHz band;
- 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

A1.6 We take into account the impact of our decisions have upon both citizen and consumer interests in the markets we regulate. In proposing changes to the Primary Regulations we considered the wider impact beyond immediate stakeholders in the radiocommunications community. We believe that widening the exemption will be of benefit to consumers for the following reasons:

- reduces the regulatory and administrative burden on our stakeholders;
- unlikely to cause harmful interference to other spectrum use; and
- supports 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

A1.7 In accordance with the WT Act, we must 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.

Options considered

A1.8 The types of licence-exemption measure considered in these regulations fall into two categories:

i) implementation of European 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.

A1.9 We are required to implement European Commission Decisions by law. Therefore for the first category of measures, we merely identified the potential benefits of implementing the measures and assessed their potential impact on the costs for business and for us.

A1.10 The options open to us in relation to the management of radio spectrum equipment use generally fall into the following categories:

- Not to authorise use;
- To authorise use through the issue of a WT licence; or
- To authorise use through exemption from the need to hold an individual WT licence.

A1.11 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.

A1.12 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 European Commission Decisions

A1.13 The table below presents our analysis of the first category of measures where we are merely implementing 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 26.957 – 27.285 MHz and 40.66 – 40.70 MHz bands	Implement the SRD Decision as amended 26.957 – 27.285 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.	26.957 – 27.285 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. 40.66 – 40.70 MHz – We do not expect significant use due to the limited allocation of 40

Device	Description of exemption	General benefit of change	Potential costs
		40.66 – 40.70 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.	kHz. Therefore the likelihood of interference or congestion appears low.
ISM bands to the Non-Specific allocations	Add existing inductive allocations in the 6.765 – 6.795, 13.553 – 13.567 and 26.957 – 27.283 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 decreases 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[15] 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 to be low.
Inductive Applications	Add new allocation 1600 kHz - 2000 kHz 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 to be 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

[15] 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.
Inductive Applications	Increase the permitted power level in the 30 – 135 kHz band by up to 3dB	Implement SRD Decision as amended This liberalisation measure is for a slight increase in power. Hence, businesses using these types of applications could see significant benefits.	The liberalisation of the power limits, over part of the band (30 – 135 kHz) is consistent with the CEPT Recommendation on SRDs, hence the likelihood of interference or impact to other spectrum users is low.
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.
Social Alarms, Hearing Aids, 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 increases the power limit for this category of uses to a level that will permit the effective operation of Social Alarms, Hearing Aids, 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.

A1.14 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

A1.15 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.

A1.16 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.

A1.17 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. This 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. We have recently awarded spectrum in the 10, 28, 32 and 40 GHz bands and initial indications are that this is likely to be sufficient to meet demand for BWA use in these frequency ranges.
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 removed the need to amend the Primary 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 except for our implementation of the measure.
Medical and Biological applications	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.	Medical Devices benefit most from allowing the mobility of users and consequent harmonisation of the radio spectrum is needed for successful operation	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. 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 SRDs. In addition it does not stop operators from continuing to use their equipment as they were before this change.	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 those 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	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

Device	Description of exemption	General benefit of authorising	Potential costs
	incorrect 4515 kHz		any additional harmful interference
Medical and Biological applications	Amend the reference from EN 300 220 to EN 302 510 in the 30 – 37.5 MHz band	To update the regulations to the recently introduced standard	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. The potential costs are considered to be low
Hearing Aids	Remove references to the generic standard EN 300 220	To reference only the specific standard for these devices.	The exemption was already in place with both the generic and specific standards.

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 nature of these services.
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 Primary 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.
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 techniques to access spectrum and mitigate interference that provide at least equivalent performance to the techniques described in harmonised standards adopted under Directive 1999/5/EC must be used. This can include for example Listen Before Talk.	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.
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	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	This change is for clarification only and to align to the present Wireless Audio regulations so additional costs are limited.

Device	Description of exemption	General benefit of licence exemption	Potential costs
	wireless audio allocation	enables.	
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.
Medical and Biological applications	Amend the reference from EN 300 220 to EN 302 510 in the 30 – 37.5 MHz band	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 new standard.	This is an administrative measure and is unlikely to affect actual spectrum usage. Therefore it is unlikely to impose costs on other users.
Hearing Aids	Remove references to the generic standard EN 300 220	There is already licence-exempt. Manufacturers will benefit from being able to test their equipment to the specific standard.	This is an administrative measure and is unlikely to affect actual spectrum usage. Therefore it is unlikely to impose costs on other users.

Costs to business

A1.18 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.

A1.19 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 Ofcom

A1.20 There are one-off administrative costs associated with making a statutory instrument. We consider the implementation costs to be low and more than 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 us in operating a licensing regime. Operating a licence regime would include issuing licences, collecting licence fees and enforcing terms and conditions of licences.

Costs to consumers

A1.21 The costs to consumers of licensing versus exemption would mainly arise from the potential disincentive effects on the take up of services and hence a loss of the consumer surplus that licensing costs may impose.

Evaluation

A1.22 We do not intend to actively monitor these devices however we may review the regulations if there is cause for concern to other spectrum users.

Conclusion

A1.23 Licensing may still be appropriate if there was a risk of undue interference. However we have looked at the technical characteristics of the equipment and the risk of harmful interference to other licensees is low.

A1.24 Licence-exemption is therefore the preferred option to authorise the use of these devices in the UK. The analysis of the equipment shows that there is minimal risk of interference to other users of the radio spectrum; this approach is in line with our regulatory duties and also meets the demands of EC requirements providing the following benefits:

- Reduction of the regulatory burden;

- Implementing EU legislation; and
- Introduction of innovative applications and new technologies.

Annex 2

List of respondents

A2.1 The respondents to the consultation were:

- Avanti;
- Iridium Satellite LLC;
- Eutelsat; and
- Astra GB LTD.