OFFICE OF COMMUNICATIONS

Amending the Wireless Telegraphy (Exemption) Regulations 2003

Statement

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Contents

Section 1

Executive Summary

1.1 This statement outlines our intention to amend the Wireless Telegraphy (Exemption) Regulations 2003. Specifically we have decided to make the following equipment licence exempt:

- A number of Short Range Devices (SRDs) as set out in the draft European Commission (EC) Decision 2006/771/EC.
- Building Material Analysis (BMA) devices using Ultra Wide Band (UWB) technologies; and
- High Density applications in the Fixed Satellite Service (HDFSS) in the 27.5 - 27.8185 GHz, 28.4545 - 28.8265 GHz and 29.4625 - 30 GHz bands.

1.2 We have also decided to amend 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;

1.3 On 18 September 2007 we published a consultation[1] outlining a number of proposals to amend the Wireless Telegraphy (Exemption) Regulations 2003. The consultation closed on 28 November 2007. We received 33 non-confidential responses. The list of respondents is detailed in Annex 2 and their responses are published on our website[2]. In addition, we also received 2 confidential responses to our proposals.

1.4 The majority of respondents either supported, or had no objections to, our plans. We have given consideration to all of the points which were raised and these are addressed in Section 2 of this document. Having considered those responses we have decided to exempt a number of pieces of equipment from the need for a Wireless Telegraphy Act licence as described in this document.

1.5 We intend to draft amending regulations to introduce these changes. These regulations will be subject to further statutory period of consultation and we expect to publish these after the EC has finalised its draft decision on Short Range Devices (SRDs). This is expected to take place in Spring 2008. We have also received a Detailed Opinion from the EC on the Interface Requirement that relates to SRDs as a result we are not able to make regulations to make changes to the licence exemption of SRDs before 11 April 2008.

1.6 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, Ofcom and consumers.

[1] Available at http://www.ofcom.org.uk/consult/condocs/wtle/wtle.pdf.
[2] Available at http://www.ofcom.org.uk/consult/condocs/wtle/responses/.

Section 2

Statement

2.1 In our document "Wireless Telegraphy Licence Exemption amending the Wireless Telegraphy (Exemption) Regulations 2003"[3] ("the Consultation Document") published on 18 September 2007 we consulted on proposals to allow new types of equipment to operate without the need for a Wireless Telegraphy licence and to amend arrangements for some equipment that were already able to operate without the need for a Wireless Telegraphy licence.

2.2 Ofcom is responsible for authorising of civil use of the radio spectrum and achieve 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.

2.3 The Consultation Document contained a range of proposals to change the arrangements for licence exemption in the UK. These included:

- measures to permit the use of new technologies and novel radio applications without the need for users to obtain a licence from us, specifically;
  - BMA devices using UWB technologies; and
  - 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.

2.4 A full rationale for each of the exemption proposals was included in the Consultation Document.

Responses to the Consultation

2.5 We received 35 responses to the consultation of which 2 were confidential. The remaining 33 are listed in Annex 2 of this document and copies of the responses are published on our website[4]. All of the respondents either supported, or raised no objections to, our proposals. However, as discussed in more detail below, some respondents requested that some of the proposed exemptions be extended.

[3] Available at http://www.ofcom.org.uk/consult/condocs/wtle/wtle.pdf.
[4] Available at http://www.ofcom.org.uk/consult/condocs/wtle/responses/.

2.6 A summary of the responses to the questions posed in the consultation and our comments are below.

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

2.7 There were no objections to the proposals as outlined in the document. Two respondents did raise concerns about the possible interference potential of UWB equipment in general.

2.8 We note these general concerns and intend to continue to work in the European Conference of Postal and Telecommunications Administrations (CEPT) and with industry to consider how these devices can continue to co-exist with existing systems.

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, 28.4545-28.8265 GHz and 29.4625-30 GHz bands from the need to possess a WT licence?

2.9 We welcome the support of many respondents to the proposal to licence exempt users of High Density applications in the Fixed Satellite Service in the 27.5 - 27.8185 GHz, 28.4545 - 28.8265 GHz and 29.4625 - 30 GHz bands. However, a number of respondents were of the view that we could extend the application of this proposal in various ways.

2.10 Some respondents stated that we should consider licence exempting satellite earth stations that transmit with an Equivalent Isotropically Radiated Power (e.i.r.p.) up to 60 dBW, rather than the proposed level of 50 dBW, in the frequency bands 27.5 - 27.8185 GHz, 28.4545 - 28.8265 GHz and 29.4625 - 30 GHz. An e.i.r.p of 60 dBW would be consistent with the upper level of e.i.r.p. provided for in CEPT Electronic Communications Committee (ECC) Decision ECC/DEC/(06)03[5], which covers the satellite uplink bands 14.00 - 14.25 GHz and 29.5 - 30.0 GHz.

2.11 At this time, we are 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 for site clearance of 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 we will continue to consider ways of reducing regulation where possible.

2.12 Some respondents also encouraged us to licence exempt satellite earth stations transmitting with an e.i.r.p up to 60 dBW in the 14.0 - 14.25 GHz band, consistent with CEPT ECC Decision ECC/DEC/(06)03.

2.13 Again, we are unable to licence-exempt earth stations in the 14.0 - 14.25 GHz band. We are currently taking steps to reduce the regulatory burden for earth station networks in the 14.00 - 14.25 GHz band. This involves the retention of the network earth station licence but minimises the instances where clearance and registration of individual earth station terminals is required. Again, we will keep these arrangements under review with a view to further reducing regulation where possible.

[5] 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.

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?

2.14 We received no objections however, we have had to make a number of changes to our original proposals as a result of guidance from the EC. These new proposals were consulted on in our document "Wireless Telegraphy Licence Exemption, Proposal to amend the Wireless Telegraphy (Exemption) Regulations 2003"[6] on 23 November 2007. This issue is discussed in more detail later in this document.

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

2.15 This proposal received the greatest support from respondents. Most of the respondents were fully supportive. In particular we received 26 responses supporting the proposal to licence exempt the use of anti-collision equipment for gliders (e.g. FLARM) in the UK and we welcome the broad support for this proposal.

2.16 One respondent raised an objection to this proposal if the exemption of these devices was a precursor to mandating the use anti-collision equipment on all gliders. We have no powers over the installation of equipment on gliders. The Civil Aviation Authority (CAA) is the body in the UK responsible for airspace policy and safety regulations.

2.17 One respondent commented that the current European Telecommunications Standards Institute (ETSI) standard EN 300 330[7] requires a measurement of magnetic field to be taken at 10m distance through free space. The respondent requested that higher powers be permitted where fields propagate through media other than air, such as building materials, rock, soil and water, providing that they meet the specified emission limits.

2.18 The Reference Standard for magnetic equipment (EN 300 330) allows for extrapolation of measurement limit, where any measurement cannot be made at the prescribed 10 m distance. However the Standard does not currently have any such extrapolations for media, other than free space. To allow apparatus to be brought into use, extrapolation data for other media will need to be recognised by European standards and Notified Bodies.

2.19 There may be benefits in this suggestion and we will keep this issue under review. However we would need to consult further before making such a change and we do not propose to allow an increase in power at this time.

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

2.20 We received no objections to this proposal. One respondent requested that the exemption regulations be extended to cover aeronautical and maritime satellite terminals.

2.21 Under the Chicago Convention[8], aircraft are required to hold a radio license; this is confirmed in the UK as the requirements of the Chicago Convention are incorporated into UK law by way of the Air Navigation Order 2005 (SI 2005/1970) and the

[6] Available at http://www.ofcom.org.uk/consult/condocs/wireless_exemption/wireless_exe.pdf.
[7] Available at http://www.ETSI.org.
[8] Available at http://www.caa.is/2000/s-bok/S-1-2A.pdf.

requirements for aircraft to hold licenses for installed radio equipment is stated again in our recent consultation on Mobile Communications Aircraft (MCA)[9], which closed on 30 November 2007. As a result we can not make aeronautical satellite terminals exempt from the need for licences at this time.

2.22 In our consultation of 22 February 2005[10] on ships radio licensing and in the policy statement of 8 December 2005 we indicated the following requirement for the ship's radio licence;

> *Ofcom, as the regulator, is responsible for the licensing and use of radio equipment on all ships registered in the UK, the Channel Islands and the Isle of Man and on all ships in UK territorial waters. The requirement for licensing stems from the International Telecommunication Union (ITU) Radio Regulations. Article 18 and in particular Recommendation 7 of the Radio Regulations, stipulate the requirement for a ships' radio licence. This requirement is incorporated within the Wireless Telegraphy Act as amended. In addition, there are other Statutory Instruments relating to ships' radio. A similar requirement is made on all other administrations (regulatory authorities). This means that whether a vessel is operating within UK territorial waters, on the high seas or within the territorial waters of another administration, it is necessary to be in possession of a valid ships' radio licence. Regulatory authorities may ask to inspect the ship's radio licence and have the power to detain the vessel if the documentation is not in order.*

2.23 Again, we are unable to make maritime satellite terminals licence exempt at this time.

Additional amendments

2.24 Since the publication of the Consultation Document on 18 September 2007 we have had to make some additional amendments to our proposals. The two areas we have had to make changes to relate to:

- Social Alarms, Hearing Aids, Meter Reading & Asset Tracking licence-exempt devices in the 169.4 - 169.475 MHz band; and
- Technical restrictions for some existing licence exempt SRDs.

2.25 Full details of the changes and the rationale for doing so are explained in greater detail below.

European Commission Decision on the harmonisation of the 169.4 – 169.8125 MHz frequency band in the Community (2005/928/EC)

2.26 As a result of EC Decision 2005/928/EC of 20 December 2005 on the harmonisation of the 169.4 - 169.8125 MHz frequency band in the Community"[11] Member States were obliged to permit the use of a number of devices in this band.

2.27 The Decision distinguishes between two parts of the 169.4 – 169.8125 MHz band, the upper and low power part. Our proposals in relation to upper part of the band

[9] Available at http://www.ofcom.org.uk/consult/condocs/mca/mobilecomms.pdf.
[10] Available at http://www.ofcom.org.uk/consult/condocs/src/.
[11] Available at http://eurlex.europa.eu/LexUriServ/site/en/oj/2005/l_344/l_34420051227en00470051.pdf.

169.6125 - 169.8125 MHz are addressed as part of a separate consultation published on 10 October 2007 that closed on 5 December 2007[12]. Our conclusions on this consultation can be found in the Statement 'The Future use of 169 MHz Ex-ERMES band'[13].

2.28 To implement the Articles of the Decision relating to the low power part of the band in the UK we made the 2006 Amendment Regulations[14] which authorised the use in the lower part of the band for four devices (Social Alarms, Hearing Aids, Meter Reading & Asset Tracking) with a maximum power limitation of 10 mW.

2.29 In the Consultation Document we proposed to increase the power from 10 mW to 500 mW for Meter Reading and Asset Tracking devices.

2.30 However, after the publication of our consultation document, at a meeting of the Radio Spectrum Committee ("RSC") on 4-5 October 2007 in Brussels, the EC highlighted inconsistencies in the ways in which Member States had implemented the Decision. In order to clarify the technical requirements, the EC published guidance[15] on 21 September 2007 to Member States on how to implement the Decision.

2.31 In light of the EC's guidance we decided to implement these particular changes before the consultation closed. We issued draft regulations for consultation in the document "Wireless Telegraphy Licence Exemption, Proposal to amend the Wireless Telegraphy (Exemption) Regulations 2003"[16] on 23 November 2007. The closing date for comments was 7 January 2008.

2.32 One of our other duties is to notify the EC of amendments to or creation of new Interface Requirements. As a result of the amendments proposed in the Consultation Document we needed to update the interface requirement. We therefore submitted the Interface Requirement IR 2030, pertaining to Short Range Devices (SRDs), to the EC.

2.33 Following the submission of this Interface Requirement, we received a Detailed Opinion from the EC highlighting areas where they would want us to amend the draft IR 2030 prior to adopting the measures. We have no objections to any of these changes and have incorporated them into the new draft of IR 2030 which can be found on our website[17].

2.34 However as a consequence of this Detailed Opinion we were unable to adopt the measures relating to the updated IR 2030 before 11 April 2008. We therefore decided to withdraw the amendment to the proposed Exemption Regulations relating to Meter Reading, Asset Tracking, Social Alarms and Hearing Aids operating in the 169.4 – 169.6 MHz band.

Changes to IR 2030

2.35 As a result of the Detailed Opinion we received from the EC we have had to revise IR 2030. These changes are in addition to the previous proposals in the consultation on complying with the EC Decision on SRDs. The revised IR 2030 will also include the

[12] Available at http://www.ofcom.org.uk/consult/condocs/169mhz/169mhz.pdf
[13] Available at http://www.ofcom.org.uk/consult/condocs/169mhz/.
[14] Available at http://www.opsi.gov.uk/si/si2006/20062994.htm.
[15] Available at http://ec.europa.eu/information_society/policy/radio_spectrum/docs/ref_docs/rsc21_public_docs/rscom07_67_2005_928_interpr.pdf.
[16] Available at http://www.ofcom.org.uk/consult/condocs/wireless_exemption/wireless_exe.pdf.
[17] Available at http://www.ofcom.org.uk/radiocomms/ifi/tech/interface_req/draft_ir/.

amendments to Social Alarms, Hearing Aids, Meter Reading, Asset Tracking devices in the 169.4 – 169.8125 MHz band as set out above.

2.36 The amendments to IR2030 required by the Detailed Opinion are;

- 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;
- The removal of the column titled Music or Speech;
- We have 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; and
- In table 3.12 for Inductive Applications the relaxation of power limitations below 135 kHz by up to 3 dB.

2.37 In addition, we have taken the opportunity to make some minor amendments to update and correct any errors in the document. These additional amendments are:

- In table 3.1 for Non-Specific SRDs category (xi), the amendment of text relating to the use of 418 MHz that became time expired on 1 January 2008. Also, the inclusion of the correct limitations for Audio relating to the wideband 863 to 870 MHz band, category (xxiv);
- In table 3.7 for Railway Applications – correct the frequency allocation from 4515 kHz to 4516 kHz;
- In table 3.20 for Model Control – amend 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, add reference EN 300 422 to categories i and ii and EN 301 357 in category iii;
- In table 3.22 for Radio Hearing Aids, amending the title to align with the present harmonised European term, Assistive Listening Devices; and
- In 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 now read “≤25 mW Peak”.

European decision on SRDs

2.38 The EC Decision 2006/771/EC on the harmonisation of short range devices (SRDs)[18] is intended to enable the use of selected devices across the European Community. The Annex to the Decision lists technical parameters for a selection of apparatus which shall be authorised across the Europe on a harmonised basis. The Decision is updated annually in order to take into account new technological developments. We are expecting the Decision to come into force by April 2008.

[18] Available at http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2006:312:0066:0070:EN:PDF.

Our decisions

2.39 Having considered the consultation responses we intend to make a number of changes to the 2003 Exemption Regulations.

2.40 We intend to make BMA devices using UWB technologies and HDFSS exempt from licensing, specifically:

- BMA devices using UWB technologies operating in the 0-60 GHz band will not require a WT Act licence providing they meet the technical requirements set out in IR 2069.

- 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 IR 2066[19]. However, in order to ensure compatibility with avionic systems the 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.

2.41 IR 2016 for Land Mobile Satellite Services (LMSS) will no longer list equipment by manufacturer and product name. These will be replaced by the relevant ETSI Standard or Common Technical Regulation.

2.42 In line with the guidance from the EC we intend to increase 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 will also be removed. The regulations will not come into force before the EC's standstill ends on 11 April 2008.

2.43 As a result of the changes that the EC have proposed as part of their annual revision to the EC Decision 2006/771/EC we intend to introduce the following changes for SRDs listed in the Annex of EC Decision 2006/771/EC. Those changes are for:

- All SRDs – removal of the restriction on airborne use;

- Non-Specific SRDs – removal of FM only restriction and allow digitised Audio in 26.957 – 27.285 MHz and 40.66 – 40.70 MHz bands;

- Non-Specific SRDs – add 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 – allow generic use of the band 24.15 – 24.25 GHz which was previously reserved for Movement Detection;

- Non-Specific SRDs – add new allocation at 61 – 61.5 GHz at 100mW e.i.r.p.;

- Non-Specific SRDs – allow 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;

[19] Available at http://www.ofcom.org.uk/radiocomms/ifi/tech/interface_req/draft_ir/ir2066.pdf.

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

- Inductive Applications – add 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 – remove loop antenna restrictions; and

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

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

2.44 The decision that would amend the annex of EC Decision 2006/771/EC has not yet been adopted. We do not intend to make the regulations that would implement these changes until the EC makes their decision and we intend to implement the final decision in full.

2.45 In addition to these mandatory requirements we intend to introduce the following changes to align the UK with the ERC Recommendation 70-03 relating to the use of short range devices[20]:

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

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

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

- Radio Microphones – remove channel restriction of 200 kHz.

2.46 If there are any additional changes as a result of the EC Decision on SRDs we will be obliged to implement them and therefore we will not consult on the policy issues again.

2.47 Finally we will make minor amendments as described in paragraph 2.37 and the changes required by the Detailed Opinion as described in paragraph 2.36.

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

Section 3

Next steps

3.1 We intend to implement the measures outlined in this document through making Regulations under section 8(1) of the Wireless Telegraphy Act 2006.

3.2 We are currently waiting for the EC to make a Decision that would amend EC Decision 2006/771/EC on SRDs. This is expected to be completed in Spring 2008 Once this has been finalised we will then proceed with the publication of the draft Amendment Regulations which will be subject to a further statutory consultation.

3.3 After the close of the consultation we will consider the responses, amend and then make the regulations as necessary.

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 existing Regulations"). This update will be achieved through an amendment to the existing 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 -
    - 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 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 account of the impact of our decisions have upon both citizen and consumer interests in the markets we regulate. In proposing changes to the existing 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:

- The measures concern the use of radio equipment on a licence-exempt basis which reduces the regulatory and administrative burden on our stakeholders;

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

- 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

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 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.

A1.9 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.

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 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 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[21] 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 - 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 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

[21] 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 an 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 SRD, 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 is to increase 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. 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.
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.
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 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	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	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

Device	Description of exemption	General benefit of authorising	Potential costs
	unchanged at 1.5 MHz for each channel	they were before.	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
Medical and Biological applications	Amend the reference from EN 300 220 to EN 302 510 in the 30 – 37.5 MHz band	To update 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 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.
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.	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
	This can include for example Listen Before Talk.		
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.
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 following submitted non-confidential responses to the consultation document "Amending the Wireless Telegraphy (Exemption) Regulations 2003" which ran from 18 September to 27 November 2007. The responses may be viewed on the Ofcom website at http://www.ofcom.org.uk/consult/condocs/wtle/responses/.

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Name Withheld 4
Name Withheld 5
Name Withheld 6
Name Withheld 7
Name Withheld 8
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