



# Decision to make The Wireless Telegraphy (Ultra-Wideband Equipment) (Exemption) Regulations 2007

Statement

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# Contents

<b>Section</b>		<b>Page</b>
1	Introduction and Summary	1
2	Scope of the Wireless Telegraphy (Ultra-Wideband Equipment) (Exemption) Regulations 2007	3
<b>Annex</b>		<b>Page</b>
2	Impact Assessment	7
3	List of respondents	10

## Section 1

# Introduction and Summary

## Introduction

- 1.1 This document confirms that, following a formal consultation, the Wireless Telegraphy (Ultra-Wideband Equipment) (Exemption) Regulations 2007 (No. 2084) (the “Regulations”) were made by Ofcom on 20 July 2007, and are coming into force on **13 August 2007**. The Regulations can be obtained through the Office of Public Sector Information (OPSI)<sup>1</sup>.
- 1.2 The Regulations exempt the use of spectrum by equipment using ultra-wide band (UWB) technologies. UWB is a generic term for technologies typically characterised by the emission of very low power radiation spread over a very large radio bandwidth.
- 1.3 Ofcom is required to comply with a European Commission Decision<sup>2</sup> (the “Decision”), the implementation of which is mandatory on all European Union (EU) Member States by 21 August 2007. The Regulations implement the Decision before this date.
- 1.4 Before deciding to make the Regulations, in accordance with the requirements of section 122(4) of the Wireless Telegraphy Act 2006 (“the Act”), on 5 June 2007 Ofcom published a Statutory Notice<sup>3</sup> (the “Notice”) containing a draft of the proposed Regulations (the “Proposed Regulations”) and inviting comments from stakeholders.
- 1.5 Having carefully considered the responses to the Notice Ofcom decided to proceed with making the Regulations.

## Background

- 1.6 In the United Kingdom, Ofcom is responsible for the authorisation of civil use of the radio spectrum and achieves this by granting Wireless Telegraphy licences under the Act and by making Regulations exempting users of particular equipment from the requirement to hold such a licence. Under section 8(1) of the Act, it is an offence to install or use equipment to transmit without holding a licence granted by Ofcom, unless the use of such equipment is exempted.
- 1.7 Globalisation of the marketplace and increased interest from businesses in the potential of UWB technology has led to a growing need for more international solutions which utilise spectrum in a harmonised manner for UWB technology. UWB solutions now have the advanced technical characteristics necessary, for example, to allow for the co-location of multiple devices in a small area which is a requirement of the Short Range Device, consumer electronics, retail and logistics industries. Implementation of the Decision on UWB will go some way towards addressing these requirements and enable the benefits of this new technology to be realised.

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<sup>1</sup> A link to the online version can be found at [http://www.opsi.gov.uk/si/si2007/ukxi\\_20072084\\_en.pdf](http://www.opsi.gov.uk/si/si2007/ukxi_20072084_en.pdf)

<sup>2</sup> Commission Decision of 21 February 2007 on harmonisation of the radio spectrum for equipment using ultra-wideband technology in a harmonised manner in the Community (2007/131/EC).

<sup>3</sup> [http://www.ofcom.org.uk/consult/condocs/uwb\\_exemption/](http://www.ofcom.org.uk/consult/condocs/uwb_exemption/)

- 1.8 Ofcom first consulted on policy considerations with respect to UWB technology in January 2005<sup>4</sup>. The overriding view of stakeholders responding to the consultation appeared to indicate that in order to maximise the benefits available to UK citizens from the implementation of UWB technology, Ofcom should work with the relevant European bodies to achieve a harmonised approach throughout Europe for generic UWB devices.
- 1.9 After further stakeholder meetings Ofcom published a paper in September 2005 which set out the UK's strategy for the implementation of UWB technology in Europe<sup>5</sup>.
- 1.10 The Decision to allow the use of the radio spectrum for equipment using UWB technology in a harmonised manner in the Community was published on 21 February 2007. The Decision requires that Member States make available the use of radio spectrum for UWB technology on a non-interference and non-protected basis.
- 1.11 The Decision was addressed to all Member States to implement as early as possible, but no later than 21 August, six months following the entry into force of the Decision.
- 1.12 Ofcom is responsible for implementing European Community legislation – usually in the form of European Commission Decisions – relating to radio spectrum. Such measures are binding on the UK and must be reflected in UK legislation.
- 1.13 Wherever possible Ofcom seeks to reduce the regulatory burden on its stakeholders. One way in which it can do this is to remove the need for spectrum users to apply for individual licences to authorise the use of radio equipment.
- 1.14 On 5 June 2007 Ofcom published the Notice which provided an opportunity for stakeholders to make representations about the Proposed Regulations granting an exemption to compliant UWB equipment as the means by which Ofcom intend to transpose the Decision into UK legislation (rather than seeking views on the content of the Decision itself).
- 1.15 12 responses were received from organisations in response to this consultation. These are available in full on the Ofcom website<sup>6</sup>. In addition comments were received from the Channel Islands and the Isle of Man. The majority of these responses were supportive of the proposals. A list of the respondents is set out in Annex 2.

### **Structure of this document**

- 1.16 Section 2 of this document sets out the Scope of the Regulations and discusses the responses to the consultation and Ofcom's comments.
- 1.17 A copy of the Regulatory Impact Assessment for the Regulations is available at Annex 1 to this document.
- 1.18 A list of respondents to the Notice is at Annex 2.

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<sup>4</sup> <http://www.ofcom.org.uk/consult/condocs/uwb/uwb2/>

<sup>5</sup> For more details see [http://www.ofcom.org.uk/consult/condocs/uwb/uwb\\_statement/](http://www.ofcom.org.uk/consult/condocs/uwb/uwb_statement/)

<sup>6</sup> [http://www.ofcom.org.uk/consult/condocs/uwb\\_exemption/responses/](http://www.ofcom.org.uk/consult/condocs/uwb_exemption/responses/)

## Section 2

# Scope of the Wireless Telegraphy (Ultra-Wideband Equipment) (Exemption) Regulations 2007

## Final Scope of the Regulations

- 2.1 Some of the responses to the Notice made suggestions about the wording in the Proposed Regulations, which resulted in several minor alterations as discussed below. The structure remains unchanged.
- 2.2 Regulation 1 sets out the date on which the Regulations come into force and the citation of the Regulations.
- 2.3 Regulation 2 contains the definitions.
- 2.4 Regulation 3 provides the exemption for UWB equipment from section 8(1) of the Act, subject to satisfactory compliance with the requirements set out in Regulation 4.
- 2.5 Regulation 4 sets out these requirements, namely that UWB equipment must:
  - be used indoors (paragraph 2(a)) or, where it is not used indoors, not be attached to any infrastructure, installation or outdoor antenna that is fixed or to any motor vehicle or railway vehicle (paragraph 2(b));
  - not cause harmful interference to any wireless telegraphy (paragraph (3)); and
  - comply with the permissible mean and peak equivalent isotropic radiated power (e.i.r.p.) transmission limits for different frequencies as set out in paragraphs (4) and (5).

## Extent of application

- 2.6 The Proposed Regulations were drafted so that they did not extend to the Channel Islands and the Isle of Man.
- 2.7 In their responses to the Notice the Island Authorities requested that the Proposed Regulations extend to the Channel Islands and the Isle of Man. The Proposed Regulations were altered to reflect this change (that is, regulation 1(2) was removed).

## Minor modifications

- 2.8 Ofcom made some minor modifications to the Proposed Regulations in finalising the Regulations.
- 2.9 There are two changes that relate to the specification of the peak e.i.r.p. limitation. Thales pointed out that the term used in the Decision, “peak e.i.r.p. density”, should not include the word “density” as what is being measured is power rather than power

density. This has recently been recognised by in a recent ECC decision<sup>7</sup> which was made after the Decision. Ofcom considers that this first amendment accurately reflects the intention of the Decision, and removes ambiguity compared with the Proposed Regulations. Therefore the Regulations do not use the term “peak e.i.r.p. density”.

- 2.10 The second change relating to peak e.i.r.p. is that the definition already specifies the measurement as being a 50 MHz bandwidth, so it is unnecessary to express the maximum peak e.i.r.p. limitations in paragraphs (4) and (5) of regulation 4 as x dBm/50 MHz. Instead the peak e.i.r.p. limitations are expressed as x dBm.
- 2.11 Thales also noted that there was potential ambiguity in the definition of the equivalent transmission level in the Proposed Regulations. The equivalent transmission level is to be used in situations where the level of the highest e.i.r.p. is being measured in a bandwidth of other than 50 MHz. The measurement that is obtained using the alternative measurement has to be compared with the scaled down peak e.i.r.p. to determine whether the equipment meets the criteria for exemption. To avoid possible confusion relating to the mis-interpretation of “equivalent transmission level”, Ofcom amended the definition slightly in the Regulations.
- 2.12 Thales also considered that the previous Ofcom consultation should be referred to in the Impact Assessment which Ofcom has now done.

### Other points

- 2.13 The Decision includes a time-limited restriction for a maximum mean emission level in the frequency bands from 4.2 and up to and including 4.8 GHz of -41.3dBm/MHz (regulation 4(d)(i)(cc)). Several responses suggested this additional time-limited restriction should be incorporated in the regulations at the outset. Ofcom notes these responses but remains of the view that it is more appropriate to specify the limit that applies up to 31 December 2010 and then amend the Final Regulations in late 2010 to align with the alternative limits to apply from 31 December 2010, should they still be applicable. It is possible that by this time the Decision will have been subject to at least one review, which may result in changes.
- 2.14 T-Mobile expressed a preference for Ofcom to use the ITU-R Recommendation SM.1755 definition of UWB equipment rather than adopt the definition used in the Decision. Ofcom considers that the definition used in the Decision is sufficiently precise and to adopt the ITU-R definition would be inconsistent with the Decision.
- 2.15 The Maritime and Coastguard Agency (MCA) noted that Ofcom had used the term “undue interference” instead of “harmful interference” as stated in the Decision and requested clarification as to its meaning. The term “undue” rather than “harmful” is used in section 8(5) of the Act and Ofcom consistently adopts this term in other exemption regulations. Ofcom considers that the term “undue” provides effectively the same reassurance as the concept of harmful interference and is therefore consistent with the Decision.
- 2.16 The MCA also requested clarification as to whether the phrase “any wireless telegraphy” covers radio determination systems. Ofcom confirms that radio determination systems are considered as wireless telegraphy.

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<sup>7</sup> <http://www.ero.dk/documentation/docs/doc98/official/pdf/ECCDEC0604.PDF>, ECC Decision of 24 March 2006, amended 7 July 2007.

- 2.17 Nokia suggested that the power limits that are set out in the Decision, as they apply to the limits below 1.6 GHz and above 10.6 GHz, should not be included and that compliance with the Radio and Telecommunications Terminal Equipment Directive 1999/5/EC would be sufficient. The same point was noted by Intellect in relation to equipment operating above 10.6 GHz. Ofcom understands this is an issue that will need further consideration within the UK and Europe but for now has included the limits to be consistent with the Decision.
- 2.18 Jersey noted that it does not have a railway system as contemplated by the Decision and therefore there is no need to include the limitation as it applies to railway vehicles in relation to Jersey. For the sake of simplicity Ofcom has not carved out any separate requirement with respect to Jersey, as in any case it will not apply to Jersey if there are no railway vehicles on the Island.
- 2.19 The Radio Society of Great Britain pointed out that the ERO Decision (ECC/DEC/(06)04) and recital 8 of the European Commission Decision noted that the presumption that UWB equipment will cease transmission within 10 seconds unless a transmission acknowledgement is received was not included in the Proposed Regulations. They considered that this was one element for mitigating unnecessary emissions and reducing potential interference. This provision is not included in the articles of the Decision and the UK could be open to infraction proceedings if it were to impose additional restrictions to those contained in the articles of the Decision. Ofcom notes that the draft Harmonised Standard EN 302 065 on UWB for communication purposes does however contain such constraints so that equipment declaring compliance with the harmonised standard or equivalency should be designed to conform with this requirement.
- 2.20 Hutchinson 3G (H3G) requested clarification on how Ofcom would ensure that UWB equipment did not cause harmful interference to any wireless telegraphy. Ofcom's approach to enforcing the legal use of radio spectrum can be found at <http://www.ofcom.org.uk/radiocomms/ifi/enforcement/>
- 2.21 H3G also noted that it did not support the blanket extension of the conditions to any low powered equipment in any band. Ofcom intends that the Regulations only implement the Decision for UWB technologies that meet the requirements set out in the articles of the decision and they are not intended to create a blanket exemption for other technologies.
- 2.22 A number of respondents commented on various ongoing international activities and Ofcom's involvement e.g. in CEPT TG3 and their potential implications for the Regulations. Ofcom intends to continue to be involved in the future international discussions on UWB. However at this stage it would not be appropriate without further consultation to take any proposed or non binding international decisions into account when implementing the Decision.
- 2.23 In relation to the low duty cycle alternative mitigation technique set out in paragraph 5(b) of regulation 4 in the Proposed Regulations, Thales suggested that Ofcom amend the wording of the low duty cycle to be consistent with the ECC Decision (06)12 that includes a further constraint that the mean "off" time over 1 second should be at least 38 milliseconds<sup>8</sup>. This provision is not included in the articles of the Decision and the UK could be open to infraction proceedings if it were to impose additional restrictions to those contained in the articles of the Decision. However, Ofcom notes that the draft Harmonised Standard EN 302 065 UWB for

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<sup>8</sup> <http://www.ero.dk/documentation/docs/doc98/official/Word/ECCDEC0612.DOC>



communication purposes contains the additional constraint in the ECC Decision (06)12 so that equipment declaring compliance with the harmonised standard or equivalency should be designed to conform with this requirement.

- 2.24 In addition a number of respondents raised various issues that related to the content of the Decision itself or any possible future revisions e.g. proposing additional obligations or restrictions. Ofcom has noted these but the Notice was only considering the implementation of the Decision as it was written. Where appropriate Ofcom will consider these issues in the ongoing UK and European discussions in this area.

## Annex 1

# Impact Assessment

## Introduction

- A2.1 In accordance with government practice, where a statutory regulation is proposed, a Regulatory Impact Assessment (RIA) must be undertaken. The analysis presented in this document represents an RIA, as defined in section 7 of the Communications Act 2003 (the “2003 Act”) for making the Wireless Telegraphy (Ultra-Wideband Equipment) (Exemption) Regulations 2007.
- A2.2 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 policymaking. This is reflected in section 7 of the 2003 Act, which means that generally Ofcom will carry out impact assessments where proposals would be likely to have a significant effect on businesses or the general public, or when there is a major change in Ofcom’s activities. However, as a matter of policy Ofcom is committed to carrying out and publishing impact assessments in relation to the great majority of our policy decisions. In accordance with section 7 of the 2003 Act, in producing this RIA, Ofcom has had regard to such general guidance as it considers appropriate including related to 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](http://www.ofcom.org.uk/consult/policy_making/guidelines.pdf)

## Background

- A2.3 In the UK, Ofcom is responsible for the authorisation of civil use of the radio spectrum and achieves this by granting Wireless Telegraphy 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 establish, install or use equipment to transmit without holding a licence granted by Ofcom, unless the use of such equipment is exempted.
- A2.4 A European Commission Decision<sup>9</sup> (the “Decision”) to allow the use of the radio spectrum for equipment using ultra-wideband (“UWB”) technology in a harmonised manner in the Community was published on 21 February 2007.
- A2.5 The Decision was addressed to all Member States to implement as early as possible but no later than 21 August 2007, six months following the entry into force of the Decision. As a consequence, in order to comply with the Decision, Ofcom consulted on a proposal to make a new statutory instrument, the Wireless Telegraphy (Ultra-Wideband Equipment) (Exemption) Regulations 2007 (the “Proposed Regulations”), in a notice published on 5 June 2007<sup>10</sup>.

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<sup>9</sup> Commission Decision of 21 February 2007 on harmonisation of the radio spectrum for equipment using ultra-wideband technology in a harmonised manner in the Community (2007/131/EC) [http://eur-lex.europa.eu/LexUriServ/site/en/oj/2007/l\\_055/l\\_05520070223en00330036.pdf](http://eur-lex.europa.eu/LexUriServ/site/en/oj/2007/l_055/l_05520070223en00330036.pdf)

<sup>10</sup> Notice of Ofcom’s proposal to make (Ultra-Wideband Equipment) (Exemption) Regulations 2007, available at [http://www.ofcom.org.uk/consult/condocs/uwb\\_exemption/uwb\\_exemption.pdf](http://www.ofcom.org.uk/consult/condocs/uwb_exemption/uwb_exemption.pdf)

A2.6 Ofcom previously consulted on policy considerations with respect to the use of equipment incorporating UWB technology in January 2005<sup>11</sup>. On review of the responses to the Ofcom policy consultation the overriding view of stakeholders appeared to indicate that in order to maximise the benefits available to UK citizens from the implementation of UWB technology, Ofcom should work with the relevant European bodies to achieve a harmonised approach throughout Europe for generic UWB devices.

## Proposal

A2.7 This RIA relates to the proposal to make new regulations in order to comply with the Decision.

## The citizen and/or consumer interest

A2.8 Ofcom takes account of the impact of its decisions upon both citizen and consumer interests in the markets it regulates. As a Member State, the UK is bound by the terms of the Decision and the requirement to implement them by 21 August 2007. However in addition:

- the measures proposed will allow the use of UWB equipment on a licence-exempt basis which reduces the regulatory and administrative burden on Ofcom's stakeholders;
- the likely uses include products that benefit consumers particularly consumer communications and high speed networking within Personal Area Networking environments;
- UWB is a potential alternative to other local area wireless technologies, such as Bluetooth, Zigbee and other WPAN technologies, which themselves replace cable links and complement these. In general wireless links offer a number of benefits to the consumer, including greater flexibility in positioning devices, ease of making occasional connections and the aesthetic advantage of cable replacement. They also provide much higher data rates, flexibility and greater range than IR and wired connections; and
- a key difference between UWB and existing wireless alternatives is that it offers data transfer rates of 100 Mbps or greater. Other characteristics of UWB include extended battery life for consumer goods (owing to the low duty cycle and bursty nature of UWB connections leading to power savings) and potentially low prices.

## Ofcom's policy objective

A2.9 As a Member State, the UK is bound by the terms of the Decision and the requirement to implement them by 21 August 2007.

## Options considered

A2.10 The options open to Ofcom in relation to the implementation of the Decision are as follows:

- to make Regulations that are compliant with the Decision; or

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<sup>11</sup> <http://www.ofcom.org.uk/consult/condocs/uwb/uwb2/>

- to do nothing.

## **Analysis of the different options**

### **Make new Regulations**

A2.11 The most efficient route to mandatory compliance is to make Regulations that enact the Decision as closely as possible.

### **Do nothing**

A2.12 By doing nothing, Ofcom would be in breach of the Decision and could be open to infraction proceedings initiated by the European Commission. Further, without the benefit of an exemption from the 2006 Act users of UWB equipment would need a licence which would result in a greater regulatory and administrative burden on individuals.

### **The preferred option**

A2.13 The preferred option therefore is to make Regulations in order to comply with the Decision. The benefits of this option are compliance with European Community law, a reduction in the regulatory and administrative burden for stakeholders wishing to use compliant UWB devices and more generally benefits to consumers from the potential introduction of an alternative wireless technology.

## Annex 2

# List of respondents

A3.1 A total of 15 responses were received to the Notice:

BT

Chief Secretary's Office, Isle of Man

Hutchinson 3G

INMARSAT

Intellect

Maritime and Coastguard Agency

Nokia

Policy Council, The States of Guernsey

Radio Society of Great Britain, Amsat-UK and UK Microwave Group

T-Mobile

Thales

The Deputy Bailiff of Jersey

Ubisense

UK Broadband

WiMedia Alliance