Notice of proposal to make Wireless Telegraphy Exemption Regulations 2016

User Terminal Exemptions

Consultation

Publication date:	28 July 2016
Closing Date for Responses:	30 August 2016

About this document

This document invites comments on Ofcom's proposal to make two sets of regulations, the Wireless Telegraphy (Mobile Satellite Earth Apparatus) (Exemption) Regulations 2016 and the Wireless Telegraphy (Exemption) (Amendment) (No.2) Regulations 2016.

The proposal enables the use of user terminals (e.g. mobile and satellite phones) on a licence exempt basis within the 1980 to 2200 MHz ('2 GHz band'), 2350 to 2390 MHz ('2.3 GHz band') and 3400 to 3800 MHz ('3.4 GHz band') bands and outline the proposed technical parameters for the use within these bands.

The consultation closes on 30 August 2016.

Contents

Section 1

Executive summary

1.1 In line with current UK practice and in order to minimise the regulatory burden on citizens and consumers this document consults on two draft regulations that would exempt the use of certain user terminals (e.g. handsets) from the need to hold a licence. To do this we propose to make:

- the Wireless Telegraphy (Mobile Satellite Earth Apparatus) (Exemption) Regulations 2016 (the 'Proposed 2 GHz MSS Regulations'); and
- the Wireless Telegraphy (Exemption) (Amendment) (No.2) Regulations 2016 (the 'Proposed Amendment Regulations') by amending the Wireless Telegraphy (Exemption) Regulations 2003 (the '2003 Regulations').

1.2 These Regulations would permit, on a licence-exempt basis, the use of the following equipment when connecting to a licensed network:

i) Mobile Satellite Service (MSS) user terminals (e.g. satellite phones) within the 1980 to 2010 MHz and 2170 to 2200 MHz frequency bands ('2 GHz band') that comply with the technical parameters set out in the Proposed 2 GHz MSS Regulations[1];

ii) mobile user terminals (e.g. handsets and dongles) in the 2350 to 2390 MHz ('2.3 GHz band') that comply with the technical parameters set out in IR 2098[2] ; and

iii) mobile user terminals in the 3400 to 3800 MHz ('3.4 GHz band') that comply with the technical parameters set out in IR 2097[3]. This is in line with the technical provision as set out in European Commission (EC) Amending Decision 2014/276/EU[4] (the 'Amending Decision') which amended EC decision 2008/411/EC[5] (the '3.4 GHz Decision').

1.3 In accordance with the requirements of section 122(4) and (5) of the Wireless Telegraphy Act 2006 (the 'WT Act'), this document gives notice of our intention to make the Proposed 2 GHz MSS Regulations and the Proposed Amendment Regulations. A copy of both sets of regulations can be found in Annexes 7 and 8 of this document.

1.4 Comments on the drafting of both Regulations are invited by 30 August 2016. Subject to consideration of responses we intend to bring the new Regulations into force in by November 2016. An impact assessment is available at Annex 5. Further copies may be obtained from www.ofcom.org.uk or from Ofcom at Riverside House, 2a Southwark Bridge Road, London SE1 9HA.

[1] In order for Ofcom to authorise the use of similar 2 GHz MSS equipment on an aircraft, we intend to extend the existing aeronautical licensing regime via the use of a Notice of Variation (NoV) to an aircraft radio WT Act licence.
[2] http://stakeholders.ofcom.org.uk/binaries/spectrum/spectrum-policy-area/spectrum-management/research-guidelines-tech-info/interface-requirements/IR_2098_2.3_GHz_final.pdf
[3] http://stakeholders.ofcom.org.uk/binaries/spectrum/spectrum-policy-area/spectrum-management/research-guidelines-tech-info/interface-requirements/IR_2097_2015_final.pdf
[4] http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32014D0276&qid=1414427840029&from=EN
[5] http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2008:144:0077:0081:EN:PDF

Section 2

Background

Authorising spectrum use

2.1 Ofcom is responsible for authorising civil use of the radio spectrum and achieves 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 establish, install or use equipment to transmit without holding a licence granted by us, unless the use of such equipment is exempted.

2.2 Under section 8(4) of the WT Act, we have to make regulations to exempt equipment if the following conditions are met, namely its use is not likely to:

- involve undue interference with wireless telegraphy;
- have an adverse effect on technical quality of service;
- lead to inefficient use of the part of the electromagnetic spectrum available for wireless telegraphy;
- endanger safety of life;
- prejudice the promotion of social, regional or territorial cohesion; or
- prejudice the promotion of cultural and linguistic diversity and media pluralism.

2.3 In accordance with the requirements of section 8(3B) of the WT Act, the terms, provisions and limitations specified in the regulations must be:

- objectively justifiable in relation to the wireless telegraphy stations or wireless telegraphy apparatus to which they relate;
- not such as to discriminate unduly against particular persons or against a particular description of persons;
- proportionate to what they are intended to achieve; and
- transparent in relation to what they are intended to achieve.

2.4 In making a device exempt from licensing we specify the characteristics of the equipment that can be used. A key issue is a device's transmitting power. Radio signals from high-powered devices travel further, increasing the chances of interference with others using the same frequencies. If this occurs, the frequencies will become of limited use to other users in the geographic area.

2.5 Users of licence-exempt devices need to be aware that there are no guarantees that the spectrum will be free of interference. However, by defining the maximum transmit power, along with other characteristics, we can keep the probability of undue interference low.

Licence exemption proposals

2.6 When appropriate we introduce measures to permit the use of a range of new technologies and applications without the need for users to obtain a licence from us. Qualification for exemption is related to the nature of the equipment and frequencies it uses. A number of factors influence whether undue interference occurs, these include:

- the frequency of transmission;
- the power of transmission;
- the use of the equipment; and
- the existence of relevant technical standards.

2.7 Most of the technical studies undertaken to understand whether devices can share frequencies with one another are carried out by the Conference of Postal and Telecommunications Administrations (CEPT). CEPT is the European regional organisation dealing with postal and telecommunications issues and presently has members from 47 countries.

2.8 It is made up of representatives of the postal and telecommunications administrations of European countries including Ofcom for UK radio matters. In addition to its role advising the European Union (EU) on radio spectrum matters, CEPT produces a range of other outputs that inform the development of spectrum management across CEPT member countries. The work done in CEPT is also used by European Standardisation Organizations such as the European Telecommunications Standards Institute (ETSI)[6] and European Committee for Electrotechnical Standardisation (CENELEC)[7] to develop harmonised European standards for equipment. It is on the basis of much of this work that devices can be considered for licence exemption.

2.9 We are proposing to allow new types of equipment to operate on a licence-exempt basis or to amend arrangements for frequency bands and equipment that are already subject to licence exemption. This consultation contains proposals to make exemption regulations for a number of reasons:

- to support the introduction of innovative radio technologies and applications;
- to reflect the evolution of existing technologies; and
- to implement, on a voluntary basis, measures to harmonise the UK regulations with the European region.

2.10 The detail of, and rationale for, each of the new exemption propositions is explained more fully in section 3 of this document. In addition further detailed technical information is provided, where appropriate, in additional supporting documents.

Document structure

2.11 The document is structured as follows:

[6] http://www.etsi.org/index.php/about
[7] https://www.cenelec.eu/aboutcenelec/whoweare/index.html

- Section 3 sets out the proposed changes;
- Section 4 sets out the general effects of the Proposed 2 GHz MSS Regulations and the Proposed Amendment Regulations;
- A Regulatory Impact Assessment (RIA) is available in Annex 5. The RIA sets out the risks, costs and benefits of the proposals and the effects that the proposed regulations would have;
- Annex 6 contains draft IR2016.10 to 2016.11;
- Annexes 7 and 8 contain a draft of the two proposed regulations; and
- Annex 9 contains a glossary of abbreviations.

Next steps

2.12 Following the publication of this consultation document, stakeholders are welcome to provide their feedback on the drafting of the proposed regulations. The technical parameters used in the proposed regulations have been subject to study and public consultation by CEPT already and therefore we do not anticipate revisiting those as part of this consultation process. The deadline to submit responses to us is **30 August 2016**. We expect to release a statement on this consultation by **November 2016**, having taken into account the stakeholder responses to our proposals and to make, and bring into force.

Section 3

Proposed changes

Background

3.1 To introduce the licence exemptions we are proposing to make the Wireless Telegraphy (Mobile Satellite Earth Apparatus) (Exemption) Regulations 2016 (the 'Proposed 2 GHz MSS Regulations') and the Wireless Telegraphy (Exemption) (Amendment) (No.2) Regulations 2016 (the 'Proposed Amendment Regulations')[8]. These Regulations will permit the use of user terminals, when connecting to a licensed network, from the requirement to hold a licence under the WT Act. Equipment operating in these bands will be required to meet technical parameters set out in the Proposed 2 GHz MSS Regulations and specified Interface Requirement (IR) documents.

2 GHz band MSS

3.2 We are proposing to make the Proposed 2 GHz MSS Regulations that exempt user terminals (e.g. satellite phones) used to access services via a licensed Mobile Satellite Service (MSS) network in the UK in the 1980 to 2010 MHz and 2170 to 2200 MHz bands ('2 GHz band').

3.3 The use of the 2 GHz band for MSS was subject to a pan-European award process by the European Commission (EC). The following EU Decisions, which are legally binding on the UK, apply to services in this band:

i) Decision 2007/98/EC[9] on the harmonised use of radio spectrum in the 2 GHz frequency bands for systems providing MSS;

ii) Decision 626/ 2008/EC[10] adopted jointly by the European Parliament and Council, provided a process for the selection and authorisation of would-be providers of MSS; and

iii) Decision 2009/449/EC[11] completed this process by selecting two operators – Inmarsat Ventures Limited and Solaris Mobile Limited (the "MSS operators") - and assigning frequencies to each for the provision of MSS at 2 GHz.

3.4 The purpose of the EU award was to facilitate the development of a competitive internal market for MSS across the European Community and to ensure gradual coverage in all Member States. The award took place in 2009 and two companies – Inmarsat (1980 to 1995 MHz and 2170 to 2185 MHz) and Solaris Mobile, subsequently acquired by Echostar, (1995 to 2010 MHz and 2185 to 2200 MHz) were selected.

3.5 Ofcom is required to exercise its functions in order to give effect to the EU Decisions. The EU Decisions were fully implemented in the UK by the Authorisation of Frequency Use for the Provision of Mobile Satellite Services (European Union)

[8] These will amend the Wireless Telegraphy (Exemption) Regulations 2003 (the '2003 Regulations').
[9] http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2007:043:0032:0034:EN:PDF
[10] http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2008:172:0015:0024:EN:PDF
[11] http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2009:149:0065:0068:EN:PDF

Regulations 2010[12] as amended, under which Ofcom issued authorisations to Inmarsat Ventures Limited and Solaris Mobile (now Echostar).

3.6 In 2011 we proposed and consulted[13] on a set of interim technical parameters for the use of MSS user terminals in the 2 GHz band. These interim limits were developed in order to allow the use of the 2 GHz MSS band. At that time, the Electronic Communications Committee (ECC) / CEPT was undertaking work on a new report investigating adjacent band compatibility between MSS and 3G mobile which was expected to conclude in 2012/2013. Based on the responses received, we decided not to proceed with the interim exemption and, instead to wait until the CEPT work, which we anticipated would be used for a European-wide approach, was completed[14].

Use of 2 GHz MSS user terminals in satellite

3.7 The CEPT have conducted a number of compatibility and sharing studies with regard to the 2 GHz band and adjacent systems. The following CEPT reports form the technical conditions for compatibility and the basis for what we propose to authorise:

3.7.1 ERC Report 065[15] *"Adjacent band compatibility between UMTS and other services in the 2 GHz band."*

3.7.2 ECC Report 197[16] *"Compatibility Studies – MSS terminals transmitting to a satellite in the band 1980- 2010 and adjacent UMTS services"*

3.7.3 CEPT Report 052[17] *"Report from CEPT to the European Commission in response to the Mandate "To undertake studies on the harmonised technical conditions for the 1900 – 1920 MHz and 2010 – 2025 MHz frequency bands ("Unpaired terrestrial 2 GHz bands") in the EU"*

3.8 Since we consulted in 2011, ECC Report 197 was approved and published in May 2013. That report verifies the previous conclusions and studies in ERC Report 065 while taking into account updated characteristics of MSS terminals. The updates included the new specifications in the ETSI Harmonised Standards EN 302 574-3[18] and EN 302 574-2[19]. It also considered the use of Geostationary Satellites instead of Mid Earth Orbit Satellites. ECC Report 197 considered that the interference scenarios were acceptable and that no additional mitigations or restrictions would be required. The report suggested that a guard band of 300 kHz be retained at the 1980 MHz boundary.

3.9 ECC Decision (06)01[20] *"The harmonised utilisation of the bands 1920-1980 MHz and 2110-2170 MHz for mobile/fixed communications networks (MFCN) including terrestrial IMT systems"* gave block edges inside the 1920 to 1980 / 2110 to 2170

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12 http://www.legislation.gov.uk/uksi/2010/672/pdfs/uksi_20100672_en.pdf

13 "Licence Exemption of Wireless Telegraphy Devices: Candidates for 2011" published 7 April 2011 http://stakeholders.ofcom.org.uk/binaries/consultations/licence-exemption/summary/condoc.pdf;

14 "Notice of Ofcom's proposals for changes to the licence exemption of Wireless Telegraphy Devices" published 20 October 2011 http://stakeholders.ofcom.org.uk/binaries/consultations/notice-wireless-telegraphy/summary/main.pdf;

15 http://www.erodocdb.dk/Docs/doc98/official/pdf/REP065.PDF

16 www.erodocdb.dk/Docs/doc98/official/pdf/ECCREP197.PDF

17 http://www.erodocdb.dk/Docs/doc98/official/pdf/CEPTREP052.PDF

18 http://www.etsi.org/deliver/etsi_en/302500_302599/30257403/01.01.01_60/en_30257403v010101p.pdf

19 http://www.etsi.org/deliver/etsi_en/302500_302599/30257402/01.01.01_60/en_30257402v010101p.pdf

20 http://www.erodocdb.dk/docs/doc98/official/pdf/ECCDec0601.pdf

MHz bands that gave a 300 kHz guard band (or less). These block edges (300 kHz guard band) were implemented in Spectrum Access 2100 MHz licences.

3.10 Programme Making and Special Events (PMSE) operates in the band 2010 – 2025 MHz adjacent to the 1980 – 2010 MHz MSS band. CEPT Report 52 Section 4.2.2 notes that: '*No compatibility studies have been conducted. However, it should be noted that PMSE use, including airborne use, is permitted in some CEPT countries without reported issues. This cannot be seen to be a guarantee that issues may not arise in future'*. We consider that the intermittent profile of use of PMSE and MSS, in terms of location and duration, would result in a very low probability of harmful interference to PMSE from MSS user terminals as they are unlikely to be used in the same geographic area at the same time.

3.11 In 2010, ETSI published the following Harmonised Standards that are relevant for this equipment. These Harmonised Standards contain the technical parameters that were considered in ECC report 197 such as unwanted emission levels and Adjacent Channel Leakage Ratios. The standards are:

3.11.1 EN 302 574-3 "*Satellite Earth Stations and Systems (SES); Harmonized Standard for satellite earth stations for MSS operating in the 1980 MHz to 2010 MHz (earth-to-space) and 2170 MHz to 2200 MHz (space-to-earth) frequency bands; Part 3: User Equipment (UE) for narrowband systems: Harmonized EN covering the essential requirements of article 3.2 of the R&TTE Directive".*

3.11.2 EN 302 574-2 *"Satellite Earth Stations and Systems (SES); Harmonized Standard for satellite earth stations for MSS operating in the 1 980 MHz to 2 010 MHz (earth-to-space) and 2 170 MHz to 2 200 MHz (space-to-earth) frequency bands; Part 2: User Equipment (UE) for wideband systems: Harmonized EN covering the essential requirements of article 3.2 of the R&TTE Directive".*

3.12 These standards have recently been updated and published by ETSI to reflect the new Radio Equipment Directive (RED – 2014/53/EU)[21]. These standards are expected to supersede the existing versions on 13 June 2017 in line with dates set in the Directive. The changes are to include receiver parameters and new provisions for terminals mounted on aircraft. These changes would not influence the outcomes and conclusions of ECC Report 197.

2 GHz MSS user terminal technical parameters

3.13 The 2 GHz MSS user terminals must comply with the technical parameters set out in the Proposed 2 GHz MSS Regulations. The proposed regulations set out the necessary equipment parameters for the licence exemption of MSS equipment in the 2 GHz band in the UK. Given the work carried out and consulted on by CEPT which forms the basis for compatibility, we consider it appropriate to adopt the limits taken from ECC Report 197. The limits are taken from Regulation 5(5) of the Proposed 2 GHz MSS Regulations and are detailed below in Table 1[22].

[21] http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32014L0053&qid=1468408436704&from=en

[22] For information purposes only we have included these limits in IR2016.10 - see Annex 6.

Table 1: Technical limitations for satellite user terminals in the 1980 to 2010 MHz band

Maximum e.i.r.p and power density	**Narrowband stations with a bandwidth of less than 1 MHz transmitting to a satellite**: 45 dBm / 200 kHz **Wideband stations with a bandwidth 1 MHz or greater transmitting to a satellite:** 47 dBm / 5 MHz:

Use of 2 GHz MSS user terminals on aircraft

3.14 The use of MSS terminal equipment on aircraft will be subject to a different authorisation regime. In line with Ofcom's policy, all equipment installed on an aircraft is covered by the aircraft licence class. This will be implemented through a Notice of Variation (NoV) to the aircraft licence. The NoV will set out the technical conditions under which satellite terminals on aircraft communicating with MSS in 2 GHz bands would be licensed for operation on a UK aircraft. The NoV will align with the technical parameters set out in draft IR2016.11[23].

3.15 2 GHz MSS on-board an aircraft would transmit in the 1980 to 2010 MHz band (Earth to space) and receive in the 2170 to 2200 MHz band (space to Earth). Electronic Communication Networks (ECN) for mobile services are used below 1980 MHz. PMSE is used above 2010 MHz in the 2010 to 2025 MHz band.

3.16 CEPT has studied the co-existence issues between 2 GHz MSS on-board aircraft and systems operating in the adjacent bands. ECC Report 233[24] *"Adjacent band compatibility studies for aeronautical CGC systems operating in the bands 1980-2010 MHz and 2170-2200 MHz*" was approved and published in May 2015.

3.17 ECC Report 233 recommended four mitigation measures to reduce the risk of harmful interference from aircraft MSS terminals into systems operating in adjacent bands. With these mitigations the report concluded that the equipment could be operated without causing interference. Two of these mitigations will be implemented in Harmonised Standards and authorisations. These mitigations are to improve the transmit filtering and reduce the equivalent isotropic radiated power (e.i.r.p) depending on the aircraft altitude.

3.18 EN 301 473[25] is applicable to the MSS terminal on-board an aircraft. It has been updated in ETSI and now in the final approval process (to start national vote) and is stable. ETSI forecast that it will publish the standard in September 2016 and that it will be cited in the Official Journal of the EU in early 2017. The new Draft EN 301 473 Harmonised Standard reflects the mitigations measures in ECC Report 233 to improve the transmitter filtering which has been reflected in improved unwanted emission limits.

3.19 Aeronautical MSS terminals, as a result of the improved transmitter filtering, will be able to be operated at or above 1000 metres altitude without any reduction in e.i.r.p. Below 1000 metres altitude, e.i.r.p. reduction is required and initially terminals will

[23] See Annex 6. IR 2016.11 will be finalised when the Proposed Regulations come into force.
[24] http://www.erodocdb.dk/Docs/doc98/official/pdf/ECCREP233.PDF
[25] http://www.etsi.org/deliver/etsi_en/301400_301499/301473/02.01.01_30/en_301473v020101v.pdf

automatically determine the altitude and be deactivated below this altitude. In future, there may be development of automatic mitigation / power control that will allow operation below 1000 metres altitude. At this stage, we plan to restrict use of this equipment to altitudes above 1000 meters to an e.i.r.p. of 24 dBm, which would be no greater than what is permitted for ECN User Equipment.

3.20 The MSS terminal on-board an aircraft is planned to have a maximum transmit power of 30 dBm and an antenna gain of 15 dBi. The maximum e.i.r.p. will be 45 dBm in a 200 kHz bandwidth. This maximum e.i.r.p. is consistent with ECC Report 197 and our proposals for MSS user terminals. The technical parameters from IR2016.11 are detailed below in Table 2.

Table 2: Technical limitations for satellite user terminals on-board aircraft in the 1980 to 2010 MHz band

Maximum e.i.r.p and power density	45 dBm / 200 kHz bandwidth for altitudes at 1000 meters or above 24 dBm for altitudes below 1000 meters

2.3 and 3.4 GHz bands

3.21 We are in the process of awarding spectrum in the 2.3 GHz (2350 to 2390 MHz) and parts of the 3.4 GHz (3410 to 3600 MHz) bands. As part of this process, on 26 October 2015, we published an Information Memorandum on the award of 2.3 and 3.4 GHz spectrum bands[26] (the 'Memorandum'). In the Memorandum and supporting consultations[27], we advised that the authorisation of certain user terminals, when connecting to a licensed network, would be on a licence-exempt basis. To do this, we intend to amend the 2003 Regulations by making the Proposed Amendment Regulations. This is in line with our current practice for mobile use in other frequency bands e.g. 900 and 1800 MHz.

3.22 The mobile user terminals must comply with the technical parameters set in IR2098[28] in respect of 2.3 GHz and IR2097[29] in respect of 3.4 GHz band in order to be licence exempt. IR2098 and IR2097 set out the necessary equipment parameters for the authorisation of terrestrial systems capable of providing electronic communications services in the 2.3 GHz and 3.4 GHz bands respectively. Both IRs are available on our website[30].

2.3 GHz band technical parameters

3.23 In June 2014 an ECC Decision[31] set out harmonised technical and regulatory conditions for the 2.3 GHz band. The implementation of the decision is not

[26] http://stakeholders.ofcom.org.uk/binaries/consultations/2.3-3.4-ghz-auction-design/information-memorandum/info-memorandum.pdf
[27] http://stakeholders.ofcom.org.uk/binaries/consultations/2.3-3.4-ghz-auction-design/statement/statement.pdf
[28] http://stakeholders.ofcom.org.uk/binaries/spectrum/spectrum-policy-area/spectrum-management/research-guidelines-tech-info/interface-requirements/IR_2098_2.3_GHz_final.pdf
[29] http://stakeholders.ofcom.org.uk/binaries/spectrum/spectrum-policy-area/spectrum-management/research-guidelines-tech-info/interface-requirements/IR_2097_2015_final.pdf
[30] http://stakeholders.ofcom.org.uk/spectrum/technical/interface-requirements/
[31] http://www.erodocdb.dk/Docs/doc98/official/pdf/ECCDEC1402.PDF

mandatory. However, in addition the EC issued a mandate to CEPT to carry out work to look into harmonised technical measures.

3.24 In March 2015[32], CEPT provided a report to the Radio Spectrum Committee (RSC) which aligned with the ECC Decision, providing information on the technical parameters, sharing conditions and views on how a licensed shared access (LSA) approach could be implemented. The CEPT report aligned with the ECC Decision on the harmonised technical and regulatory conditions for the use of the 2.3 GHz band. Discussions on a potential Commission Decision on the harmonisation of the band are still on going.

3.25 In the absence of a Commission Decision, we decided to proceed with the award by aligning licence conditions with the ECC Decision. If a subsequent Commission Decision mandates different conditions, we will consider our obligations arising from that Decision, including whether it was necessary to change the licences to comply with European law. Regulation 3 of the Amendment Regulations will require that equipment must meet the technical parameters set out in IR2098, for information these are detailed below in Table 3.

Table 3: Technical limitations for mobile user terminals in the 2350 to 2390 MHz band

Maximum Transmit Power / Power Density	Mobile/ Nomadic terminal station 25 dBm TRP per device * Irrespective of the number of transmit antennas.

3.4 GHz band technical parameters

3.26 On 21 May 2008, the EC adopted the decision on the harmonisation of the 3.4 GHz band for terrestrial systems capable of providing electronic communications services in the Community[33] (the '3.4 GHz Decision'). The 3.4 GHz Decision required Member States to designate and make available the band, on a non-exclusive basis, for terrestrial ECN, in compliance with a number of technical parameters set out in the annex to the 3.4 GHz Decision.

3.27 The 3.4 GHz Decision was implemented in the UK by way of the 3400-3800 MHz Frequency Band (Management) Regulations 2008[34], which required Ofcom to exercise its functions under the WT Act so as to give effect to the obligations of the UK.

3.28 On 2 May 2014, the EC adopted Decision 2014/276/EU[35] (the 'Amending Decision') which amended the 3.4 GHz Decision, primarily in relation to the technical conditions, set out in the annex. The Amending Decision was implemented in the UK by the 1452-1492 MHz and 3400-3800 MHz Frequency Bands (Management) Regulations 2016[36].

[32] http://www.erodocdb.dk/Docs/doc98/official/pdf/CEPTREP056.PDF
[33] http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2008:144:0077:0081:EN:PDF
[34] http://www.legislation.gov.uk/uksi/2008/2794/pdfs/uksi_20082794_en.pdf
[35] http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32014D0276&qid=1414427840029&from=EN
[36] http://www.legislation.gov.uk/uksi/2016/495/pdfs/uksi_20160495_en.pdf

3.29 In line with the Regulation 3 of the Amending Decision, we are proposing that mobile user terminals will be required to operate within the conditions set out in IR2097 in order to be licence-exempt, for information these are detailed below in Table 4.

Table 4: Technical limitations for mobile user terminals in the 3400 to 3800 MHz band

Maximum Transmit Power / Power Density	Mobile/ Nomadic terminal station 25 dBm TRP per device * Irrespective of the number of transmit antennas.

Section 4

General effects of the draft regulations

The Legislative Framework

4.1 As previously stated, 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 Ofcom, unless the installation or use of such equipment is exempted. Ofcom can exempt the establishment, installation and use of wireless telegraphy equipment by making regulations under section 8(3) of the WT Act.

4.2 We propose to implement the changes in this document by making the Proposed 2 GHz MSS Regulations and the Proposed Amendment Regulations.

4.3 Before making any regulations we are required by section 122(4) of the WT Act to give notice of our proposal to do so. Under section 122(5), the notice must state that we proposes to make the Regulations in question, set out their general effects, specify an address from which a copy of both Regulations may be obtained, and specify a time of at least one month before which any representations with respect to the proposals must be made to us.

Extent of application

4.4 The Proposed 2 GHz MSS Regulations and the Proposed Amendment Regulations will apply in the United Kingdom, the Channel Islands and Isle of Man (subject to the agreement by the Islands Authorities).

The Proposed 2GHz MSS Regulations

4.5 A draft of the proposed regulations is set out in Annex 7.

4.6 Regulation 3 provides an interpretation of the terms used in the Proposed 2 GHz MSS Regulations.

4.7 Regulation 4 exempts the use of any apparatus which connects to a MSS System, from the need to hold a licence subject to the terms, provisions and limitations set out in Regulations 5.

4.8 Regulation 5 sets out the terms, provisions and limitations relating to the establishment, installation and use of apparatus connecting to a MSS System subject to the technical provisions contained in paragraphs (2) to (5).

The Proposed Amendment Regulations

4.9 A draft of the proposed regulations is set out in Annex 8.

4.10 Regulation 2 amends Schedule 3, Part III, paragraph 3 of the 2003 Regulations in order to licence exempt the use of Long Term Evolution (LTE) and Worldwide Interoperability for Microwave Access (WiMAX) user terminals in the 2350 to 2390 MHz and 3400 to 3800 MHz bands.

4.11 Regulations 3 inserts into the 2003 Regulations reference to the corresponding technical requirements set out in IR2098 and IR2097 that equipment must meet in order to be licence exempt.

Do you have any comments on the drafting of the Proposed 2 GHz MSS Regulations or the Proposed Amendment Regulations?

Annex 1

1 Responding to this consultation

How to respond

A1.1 Ofcom invites written views and comments on the issues raised in this document, to be made **by 5pm** on **30 August 2016**.

A1.2 Ofcom strongly prefers to receive responses using the online web form at http://stakeholders.ofcom.org.uk/consultations/wt-exemption-2016, as this helps us to process the responses quickly and efficiently. We would also be grateful if you could assist us by completing a response cover sheet (see Annex 3), to indicate whether or not there are confidentiality issues. This response coversheet is incorporated into the online web form questionnaire.

A1.3 For larger consultation responses - particularly those with supporting charts, tables or other data - please email Eniola.Awoyale@ofcom.org.uk attaching your response in Microsoft Word format, together with a consultation response coversheet.

A1.4 Responses may alternatively be posted or faxed to the address below, marked with the title of the consultation.

Eniola Awoyale
3rd Floor
Spectrum Group
Riverside House
2A Southwark Bridge Road
London SE1 9HA

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

A1.5 It would be helpful if your response could include direct answers to the questions asked in this document, which are listed together at Annex 4. It would also help if you can explain why you hold your views and how Ofcom's proposals would impact on you.

Further information

A1.6 If you want to discuss the issues and questions raised in this consultation, or need advice on the appropriate form of response, please contact Eniola Awoyale on 020 7783 4680.

Confidentiality

A1.7 We believe it is important for everyone interested in an issue to see the views expressed by consultation respondents. We will therefore usually publish all responses on our website, www.ofcom.org.uk, ideally on receipt. If you think your response should be kept confidential, can you please specify what part or whether all of your response should be kept confidential, and specify why. Please also place such parts in a separate annex.

A1.8 If someone asks us to keep part or all of a response confidential, we will treat this request seriously and will try to respect this. But sometimes we will need to publish all responses, including those that are marked as confidential, in order to meet legal obligations.

A1.9 Please also note that copyright and all other intellectual property in responses will be assumed to be licensed to Ofcom to use. Ofcom's approach on intellectual property rights is explained further on its website at http://www.ofcom.org.uk/terms-of-use/

Next steps

A1.10 Following the end of the consultation period, Ofcom intends to publish a statement in November 2016.

A1.11 Please note that you can register to receive free mail Updates alerting you to the publications of relevant Ofcom documents. For more details please see: http://www.ofcom.org.uk/email-updates/

Ofcom's consultation processes

A1.12 Ofcom seeks to ensure that responding to a consultation is easy as possible. For more information please see our consultation principles in Annex 2.

A1.13 If you have any comments or suggestions on how Ofcom conducts its consultations, please call our consultation helpdesk on 020 7981 3003 or e-mail us at consult@ofcom.org.uk . We would particularly welcome thoughts on how Ofcom could more effectively seek the views of those groups or individuals, such as small businesses or particular types of residential consumers, who are less likely to give their opinions through a formal consultation.

A1.14 If you would like to discuss these issues or Ofcom's consultation processes more generally you can alternatively contact Steve Gettings, Secretary to the Corporation, who is Ofcom's consultation champion:

Steve Gettings
Ofcom
Riverside House
2a Southwark Bridge Road
London SE1 9HA

Tel: 020 7981 3601

Email: steve.gettings@ofcom.org.uk

Annex 2

2 Ofcom's consultation principles

A2.1 Ofcom has published the following seven principles that it will follow for each public written consultation:

Before the consultation

A2.2 Where possible, we will hold informal talks with people and organisations before announcing a big consultation to find out whether we are thinking in the right direction. If we do not have enough time to do this, we will hold an open meeting to explain our proposals shortly after announcing the consultation.

During the consultation

A2.3 We will be clear about who we are consulting, why, on what questions and for how long.

A2.4 We will make the consultation document as short and simple as possible with a summary of no more than two pages. We will try to make it as easy as possible to give us a written response. If the consultation is complicated, we may provide a shortened Plain English Guide for smaller organisations or individuals who would otherwise not be able to spare the time to share their views.

A2.5 We will consult for up to 10 weeks depending on the potential impact of our proposals.

A2.6 A person within Ofcom will be in charge of making sure we follow our own guidelines and reach out to the largest number of people and organisations interested in the outcome of our decisions. Ofcom's 'Consultation Champion' will also be the main person to contact with views on the way we run our consultations.

A2.7 If we are not able to follow one of these principles, we will explain why.

After the consultation

A2.8 We think it is important for everyone interested in an issue to see the views of others during a consultation. We would usually publish all the responses we have received on our website. In our statement, we will give reasons for our decisions and will give an account of how the views of those concerned helped shape those decisions.

Annex 3

3 Consultation response cover sheet

A3.1 In the interests of transparency and good regulatory practice, we will publish all consultation responses in full on our website, www.ofcom.org.uk.

A3.2 We have produced a coversheet for responses (see below) and would be very grateful if you could send one with your response (this is incorporated into the online web form if you respond in this way). This will speed up our processing of responses, and help to maintain confidentiality where appropriate.

A3.3 The quality of consultation can be enhanced by publishing responses before the consultation period closes. In particular, this can help those individuals and organisations with limited resources or familiarity with the issues to respond in a more informed way. Therefore Ofcom would encourage respondents to complete their coversheet in a way that allows Ofcom to publish their responses upon receipt, rather than waiting until the consultation period has ended.

A3.4 We strongly prefer to receive responses via the online web form which incorporates the coversheet. If you are responding via email, post or fax you can download an electronic copy of this coversheet in Word or RTF format from the 'Consultations' section of our website at http://stakeholders.ofcom.org.uk/consultations/consultation-response-coversheet/.

A3.5 Please put any parts of your response you consider should be kept confidential in a separate annex to your response and include your reasons why this part of your response should not be published. This can include information such as your personal background and experience. If you want your name, address, other contact details, or job title to remain confidential, please provide them in your cover sheet only, so that we don't have to edit your response.

Cover sheet for response to an Ofcom consultation

BASIC DETAILS

Consultation title:

To (Ofcom contact):

Name of respondent:

Representing (self or organisation/s):

Address (if not received by email):

CONFIDENTIALITY

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

Nothing ☐

Whole response ☐

Part of the response ☐

Name/contact details/job title ☐

Organisation ☐

If there is no separate annex, which parts?

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

DECLARATION

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

Ofcom seeks to publish responses on receipt. If your response is non-confidential (in whole or in part), and you would prefer us to publish your response only once the consultation has ended, please tick here. ☐

Name

Signed (if hard copy)

Annex 4

4 Consultation question

A4.1 As required by Section 122 of the Wireless Telegraphy Act 2006, we must give notice of proposals that we intend to make and consider any representations that we receive. This document gives notice of our proposal to make the Wireless Telegraphy (Mobile Satellite Earth Apparatus) (Exemption) Regulations 2016 (the 'Proposed 2 GHz MSS Regulations') and the Wireless Telegraphy (Exemption) (Amendment) (No.2) Regulations 2016 (the 'Proposed Amendment Regulations').

Do you have any comments on the drafting of the Proposed 2 GHz MSS Regulations or the Proposed Amendment Regulations?

Annex 5

5 Impact Assessment

Introduction

A5.1 Ofcom acts consistently with Government practice that, where a statutory regulation is proposed, a Regulatory Impact Assessment (RIA) should be undertaken. We also comply with our duty under section 7 of the Communications Act 2003 (the '2003 Act') to undertake impact assessments.

A5.2 The analysis presented in this document, and set out more fully in the consultation and statements referred to, is an impact assessment as relating to two new sets of regulations, the Wireless Telegraphy (Mobile Satellite Earth Apparatus) (Exemption) Regulations 2016 (the 'Proposed 2 GHz MSS Regulations') and the Wireless Telegraphy (Exemption) (Amendment) (No.2) Regulations 2016 (the 'Proposed Amendment Regulations'). It is consistent with Government practice on RIAs and Ofcom's duty under section 7 of the 2003 Act.

A5.3 Impact assessments 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 2003 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.

A5.4 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. 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://stakeholders.ofcom.org.uk/binaries/consultations/better-policy-making/Better_Policy_Making.pdf

A5.5 The impact of our policy decisions that have been implemented by the Regulations has already been assessed in the other documents referred to in this impact assessment. Accordingly, a separate impact assessment for the Regulations may not strictly be necessary. We nevertheless publish this document, which summarises the fuller assessments, as a matter of good practice.

Background

A5.6 This impact assessment relates to the proposal to make regulations exempting a number of user terminal devices (e.g. satellite and mobile handsets) connecting to a licensed network which meet certain criteria from the need for a licence under the Wireless Telegraphy Act 2006 (the 'WT Act').

A5.7 In the UK, Ofcom is responsible for authorising civil use of the radio spectrum and achieve this by granting wireless telegraphy licences under 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 wireless telegraphy equipment without holding a licence granted by us, unless the use of such equipment is exempted. Under section 8(4) of the WT Act, we are required to make regulations to exempt the use of wireless telegraphy equipment if

the conditions in section 8(5) of the WT Act are met, namely, if its installation or use is not likely to:

- involve undue interference with wireless telegraphy;
- have an adverse effect on technical quality of service;
- lead to inefficient use of the part of the electromagnetic spectrum available for wireless telegraphy;
- endanger safety of life;
- prejudice the promotion of social, regional or territorial cohesion; or
- prejudice the promotion of cultural and linguistic diversity and media pluralism.

A5.8 In accordance with the requirements of section 8(3B) of the WT Act, the terms, provisions and limitations specified in the regulations must be:

- objectively justifiable in relation to the wireless telegraphy stations or wireless telegraphy apparatus to which they relate;
- not such as to discriminate unduly against particular persons or against a particular description of persons;
- proportionate to what they are intended to achieve; and
- transparent in relation to what they are intended to achieve.

A5.9 The Proposed 2 GHz MSS Regulations would permit the use, on a licence exempt basis, of MSS user terminals (e.g. satellite phones) within the 1980 to 2010 MHz and 2170 to 2200 MHz frequency bands ('2 GHz band') that comply with the technical parameters set out in the Proposed 2 GHz MSS Regulations[37]

A5.10 The Proposed Amendment Regulations will amend the Wireless Telegraphy (Exemption) Regulations 2003, to permit the use of the following devices on a licence exempt basis:

i) mobile user terminals in the 2350 to 2390 MHz band ('2.3 GHz band') that comply with the technical parameters set out in IR 2098[38] ; and

ii) mobile user terminals in the 3400 to 3800 MHz band ('3.4 GHz band') that comply with the technical parameters set out in IR 2097[39]. This is in line with the technical provision as set out in European Commission (EC) amending Decision 2014/276/EU[40] (the 'Amending Decision') which amended EC decision 2008/411/EC[41] (the '3.4 GHz Decision').

[37] In order for Ofcom to authorise the use of similar 2 GHz MSS equipment on an aircraft, we intend to extend the existing aeronautical licensing regime via the use of a Notice of Variation (NoV) to an aircraft radio WT Act licence.
[38] http://stakeholders.ofcom.org.uk/binaries/spectrum/spectrum-policy-area/spectrum-management/research-guidelines-tech-info/interface-requirements/IR_2098_2.3_GHz_final.pdf
[39] http://stakeholders.ofcom.org.uk/binaries/spectrum/spectrum-policy-area/spectrum-management/research-guidelines-tech-info/interface-requirements/IR_2097_2015_final.pdf
[40] http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32014D0276&qid=1414427840029&from=EN
[41] http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2008:144:0077:0081:EN:PDF

A5.11 This RIA should be read in conjunction with the following documents where we have previously consulted and made decisions on the policy behind some of these changes, with the exception of changes that implement European Union decisions. These consultations provide an analysis of the policy options and the potential impacts of our decision, including a full impact assessment where relevant and appropriate. Therefore, this document should be read in conjunction with the following documents:

- "Authorisation of terrestrial mobile networks complementary to 2 GHz mobile satellite systems (MSS)" published 17 July 2009[42];
- "Licence Exemption of Wireless Telegraphy Devices: Candidates for 2011" published 7 April 2011[43];
- "Notice of Ofcom's proposals for changes to the licence exemption of Wireless Telegraphy Devices" published 20 October 2011[44];
- "Public Sector Spectrum Release: Award of the 2.3 and 3.4 GHz spectrum bands" published 26 May 2015[45]; and
- "The award of 2.3 and 3.4 GHz spectrum bands Information Memorandum" (the "Memorandum") published on 26 October 2015[46].

The citizen and/or consumer interest

A5.12 Our principal duty under section 3 of the 2003 Act is to further the interests of citizens in relation to communications matters; and of consumers in relevant markets, where appropriate by promoting competition. We take account of the impact of our decisions upon both citizen and consumer interests in the markets we regulate. We must, in particular, secure the optimal use for wireless telegraphy of spectrum and have regard to the principle under which all regulatory activities should be targeted only at cases in which action is needed. In proposing to make the changes to the existing regulations we have considered the wider impact beyond immediate stakeholders in the radiocommunications community. We believe that our proposals will be of benefit to consumers for the following reasons:

i) these measures concern the use of radio equipment on a licence-exempt basis, which reduces the regulatory and administrative burden on our stakeholders and helps to secure the optimal use of spectrum; and

ii) the use of the 2.3 GHz and 3.4 GHz frequency bands will further assist mobile network operators to improve network capacity and potentially offer higher speed mobile services to citizens and consumers.

iii) the use of the 2 GHz band will enable the provision of new satellite services to citizens and consumers.

[42] http://stakeholders.ofcom.org.uk/binaries/consultations/cgcs2/statement/2ghzstatement.pdf
[43] http://stakeholders.ofcom.org.uk/binaries/consultations/licence-exemption/summary/condoc.pdf
[44] http://stakeholders.ofcom.org.uk/binaries/consultations/notice-wireless-telegraphy/summary/main.pdf
[45] http://stakeholders.ofcom.org.uk/binaries/consultations/2.3-3.4-ghz-auction-design/statement/statement.pdf
[46] http://stakeholders.ofcom.org.uk/binaries/consultations/2.3-3.4-ghz-auction-design/information-memorandum/info-memorandum.pdf

Equality Impact Assessment

A5.13 Ofcom is required by statute to assess the potential impact of all our functions, policies, projects and practices on the following equality groups: age, disability, gender, gender reassignment, pregnancy and maternity, race, religion or belief and sexual orientation– an Equality Impact Assessment (EIA) is our way of fulfilling these obligations.

A5.14 Following an initial assessment of our policy decisions we considered that it was reasonable to assume that any impacts on consumers and citizens arising from the Proposed 2 GHz MSS Regulations and the Proposed Amendment Regulations in most cases would not differ significantly between groups or classes of UK consumers and citizens, all of whom would have access to these services, potentially at end-user prices reflective of all general input costs, including opportunity costs of spectrum used. We have not identified any particular impact in relation to the identified equality groups and we do not envisage that the Regulations are likely to be to the detriment of any group in society. Nor have we seen the need to carry out separate EIAs in relation to the additional equality groups in Northern Ireland: political opinion and dependants. This is because we anticipate that our decision will not have a differential impact in Northern Ireland compared to consumers in general.

Ofcom's policy objective

A5.15 We seek wherever possible, to reduce the regulatory burden upon our stakeholders, in this instance users of the radio spectrum. One way in which we can do this is to remove the need for spectrum users to apply for individual licences to authorise the use of radio equipment. Exemption is realised by describing the details of equipment and the parameters under which it may be used in a Statutory Instrument (secondary legislation called Regulations) that exempts users of such equipment from the need to hold a licence provided they comply with the terms of the regulations.

A5.16 We are also required by law to implement EU legislation relating to radio spectrum and from time to time this requires licence exemption arrangements to be changed.

Options considered

A5.17 Having made the relevant policy decisions the principal options open to us were:

i) to make regulations (the Proposed 2 GHz MSS Regulations and the Proposed Amendment Regulations) that introduce the ability for some devices to operate on a licence-exempt basis; or

ii) to do nothing, which means that these devices would need to be authorised via a WT Act licence.

Analysis of the different options

A5.18 The following section assesses the impact of the options open to Ofcom by reference to the principal changes that would be made by the Proposed 2 GHz MSS Regulations and the Proposed Amendment Regulations.

To make the regulations

A5.19 When considering the authorisation of devices Ofcom can either licence them or make regulations to exempt them from licensing. Section 8(4) of the WT Act requires that if Ofcom is satisfied that the criteria set out in section 8(5) of the WT Act are met, Ofcom must make regulations to licence-exempt the equipment. If the equipment does not meet all of the requirements of section 8(5) this does not prevent us still going ahead with exemption but any decision would need to consider the impacts verses the benefits of any such decision.

A5.20 Generally, licence exemption presents the lowest barrier to entry compared with other forms of authorisation, such as individual licences. Our analysis takes this proposition as a starting point and then assesses concerns over harmful interference or congestion to existing users (if any) or potential new users of the band. Harmful interference or congestion could negate the benefits of any reductions in the regulatory burden gained from exemption.

A5.21 The measures that the Proposed 2 GHz MSS Regulations and the Proposed Amendment Regulations would introduce could assist the development of a harmonised market across Europe for certain devices. This would bring with it many benefits from the free circulation and use of devices. Manufacturers benefit from economies of scale which drive down prices for consumers. Citizens are able to benefit from continued access to devices when travelling to other European countries.

A5.22 EU harmonisation decisions are binding on all Member States and we are therefore legally required to implement them. Harmonisation recommendations or decisions of the European Conference of Postal and Telecommunications Administrations (CEPT) are not legally binding on members but, we see benefits in harmonisation for the relevant cases set out in this document.

A5.23 In relation to the 2.3 GHz and 3.4 GHz bands, citizens and consumers may benefit from an increase in the supply of spectrum that is suitable to offer 4G services. Network operators would be able to use this spectrum to provide additional capacity and potentially higher data rates to their customers.

A5.24 In relation to the 2 GHz band, citizens and consumers may benefit from the provision of new satellite services, for example providing mobile connectivity in locations which are not served by terrestrial networks.

A5.25 Overall we believe that costs to business are likely to be lower under a licence-exempt approach than the requirement for users to obtain individual licences. Licence exemption represents the least cost regulatory approach to authorisations for the use of spectrum. For example, if use of spectrum is authorised through a licence, businesses face administrative costs associated with applying for the licence and the cost of the licence itself.

A5.26 We consider that implementing the Proposed 2 GHz MSS Regulations and the Proposed Amendment Regulations would likely to generate a net benefit for UK businesses, citizens and consumers and at worst would have a neutral outcome (to the extent that benefits may depend on the uptake of the new opportunities afforded by each proposal). We consider that each measure is unlikely to impose costs on other users. Therefore the effect of implementing the measures is likely to be positive overall.

A5.27 There are one-off administrative costs associated with making Statutory Instruments. We consider the implementation costs to be low, both in absolute terms and in comparison to licensing alternatives that might require an auction or the maintenance of a licensing scheme. Moreover, the costs such as they should also be offset by the benefits to businesses and consumers outlined above. There may also be a slight reduction in spectrum management costs in certain areas through licence exemption.

Not to make the regulations

A5.28 The alternative to making the Regulations would be to do nothing. By doing nothing, we mean not making the regulations and therefore not enabling the use of these devices on a licence-exempt basis.

A5.29 Citizens and consumers would not be able to benefit from the opportunities that these new devices could provide. The only way for citizens and consumers to use such devices would be under a licensing regime. This would impose additional administrative and financial costs to consumers. This may restrict the development of new and innovative services due to the additional barriers this process would impose on businesses and consumers.

A5.30 By not making regulations there would be no additional cost imposed on Ofcom relating to making a Statutory Instruments. However, these are slight compared with the internal costs associated with the development of the policy proposals or the additional costs associated with setting up and administrating a licensing regime for these devices.

A5.31 More importantly, if we did not implement an EU decision, the EC and others could begin legal proceedings against the UK, the costs of which we deem to be potentially very high both quantitatively and qualitatively, outweighing any costs we consider to be associated with correct implementation.

The preferred option

A5.32 For the reasons set out above, our preferred option is to make the Proposed 2 GHz MSS Regulations and the Proposed Amendment Regulations. We consider this is consistent with European law and the policy decisions taken by Ofcom.

Annex 6

6 Draft IR 2016 tables

Draft IR2016.10

Minimum requirements for the use of land mobile satellite systems operating in the 1980 – 2010 MHz band		
Mandatory (1-10)		
1	Frequency band(s)	Earth to space 1980 – 2010 MHz (space to Earth 2170 – 2200 MHz)
2	Radiocommunication Service	Land mobile satellite
3	Application	Land mobile satellite
4	Channelling	N/A
5	Modulation / Occupied bandwidth	N/A
6	Direction / Separation	N/A
7	/Maximum Transmit Power / Power Density	**Narrowband stations with a bandwidth of less than 1 MHz transmitting to a satellite**: 45 dBm / 200 kHz e.i.r.p **Wideband stations with a bandwidth 1 MHz or greater transmitting to a satellite:** 47 dBm / 5 MHz e.i.r.p
8	Channel access and occupation rules	N/A
9	Authorisation regime	Licence Exempt in accordance with requirements of Exemption Regulations.
10	Additional essential requirements	None
Informative (11-13)		
11	Frequency planning assumptions	N/A
12	Planned changes	
13	Reference	ETSI EN 302 574-3 ETSI EN 302 574-2
14	Notification	
15	Remarks	Ofcom may impose additional restrictions on the maximum power used for specific frequencies and locations.

Draft IR2016.11

Minimum requirements for the use of land mobile satellite systems on Aircraft operating in the 1980 – 2010 MHz band		
Mandatory (1-10)		
1	Frequency band(s)	Earth to space 1980 – 2010 MHz (space to Earth 2170 – 2200.0 MHz)
2	Radiocommunication Service	Land mobile satellite
3	Application	Land mobile satellite on aircraft
4	Channelling	N/A
5	Modulation / Occupied bandwidth	N/A
6	Direction / Separation	N/A
7	Maximum Transmit Power / Power Density	45 dBm / 200 kHz bandwidth for altitudes at 1000 meters or above 24 dBm for altitudes below 1000 meters
8	Channel access and occupation rules	N/A
9	Authorisation regime	Licensed
10	Additional essential requirements	None
Informative (11-13)		
11	Frequency planning assumptions	N/A
12	Planned changes	
13	Reference	ETSI EN 301 473
14	Notification	
15	Remarks	

Annex 7

7 Draft Wireless Telegraphy (Mobile Satellite Earth Apparatus) (Exemption) Regulations 2016

DRAFT STATUTORY INSTRUMENTS

2016 No

ELECTRONIC COMMUNICATIONS

The Wireless Telegraphy (Mobile Satellite Earth Apparatus) (Exemption) Regulations 2016

Made - - - -	***
Coming into force - -	***

The Office of Communications ("OFCOM"), in exercise of the powers conferred by section 8(3) of the Wireless Telegraphy Act 2006 ([a]), makes the following Regulations

Before making these Regulations Ofcom have given notice of their proposal to do so in accordance with section 122(4)(a) of the Act, published notice of their proposal in accordance with section 122(4)(b) of the Act and have considered the representations made to them before the time specified in that notice in accordance with section 122(4)(c) of the Act.

Citation, commencement and extent

1. The Regulations may be cited as The Wireless Telegraphy (Mobile Satellite Earth Apparatus) (Exemption) Regulations 2016 and shall come into force on xxx.

2. [The Regulations shall extent to the Bailiwick of Guernsey, the Bailiwick of Jersey and the Isle of Man.]

Interpretation

3. In these Regulations—

"apparatus" means wireless telegraphy apparatus or apparatus designed or adapted for use in connection with wireless telegraphy apparatus;

"associated facilities" and "electronic communications" have the meaning given to them by Article 2 of Directive 2002/21/EC of the European Parliament and of the Council of 7 March 2002 on a common regulatory framework for electronic communications networks and services([b]).

([a]) 2006 c. 36.

"dBm" means decibels of power referenced to one milliWatt;

"Echostar" means Echostar Mobile Limited, a company incorporated in the Republic of Ireland with number 426976, whose registered office is situated at 25/28 North Wall Quay, Dublin 1, Ireland.

"e.i.r.p." means equivalent isotropic radiated power;

"GHz" means gigahertz;

"MHz" means megahertz;

"Inmarsat" means Inmarsat Ventures Limited, a company incorporated in England and Wales with number 03674573, whose registered office is situated at 99 City Road, London, EC1Y 1AX;

"Mobile Satellite Earth Apparatus" means apparatus which connects to a Mobile Satellite System;

"Mobile Satellite System" means an electronic communications network and associated facilities which—

(a) is capable of providing radio-communications services between a mobile earth station and one or more space stations, or between mobile earth stations by means of one or more space stations; and

(b) is operated by Inmarsat or Echostar over the relevant frequencies;

"relevant frequencies" means the following frequencies—

(a) the frequencies from 1980 to 2010 MHz for earth to space communications; and

(b) the frequencies from 2170 to 2200 MHz for space to earth communications.

Exemption

4. The establishment, installation and use of Mobile Satellite Earth Apparatus complying with the terms, provisions and limitations in regulation 5 is hereby exempted from the provisions of section 8(1) of the 2006 Act.

Terms, provisions and limitations

5.—(1) The exemption provided in regulation 4 shall apply to Mobile Satellite Earth Apparatus which complies with the requirements of paragraphs (2) to (5) of this regulation.

(2) The apparatus shall not cause or contribute to any undue interference to any wireless telegraphy.

(3) The use of the relevant apparatus is terrestrial use only.

(4) The apparatus must transmit on the relevant frequencies.

(5) The apparatus must only emit transmissions which, when measured in any direction—

(a) have a maximum mean e.i.r.p. density no greater than 45 dBm per 200 kHz, for apparatus that operates with a bandwidth of less than 1 MHz;

(b) have a maximum mean e.i.r.p. density no greater than 47 dBm per 5 MHz, for apparatus that operates with a bandwidth of 1 MHz or greater.

Name
[Details]
For and by the authority of the Office of Communications

Date

([b]) OJ No L 18, 24.04.2003, p33. Article 2 was amended by Directive 2009/140 EC of the European Parliament and of the Council of 25 November 2009 amending Directives 2002/21/EC on a common regulatory framework for electronic communications networks and services, 2002/19/EC on access to, and interconnection of, electronic communications networks and associated facilities, and 2002/20/EC on the authorisation of electronic communications networks and services, OJ L 337, 18.12.2009, p7. There are other amendments to Directive 200221 not relevant to these Regulations.

Annex 8

8 Draft Wireless Telegraphy (Exemption) (Amendment) (No.2) Regulations 2016

DRAFT STATUTORY INSTRUMENTS

2016 No. XXX

ELECTRONIC COMMUNICATIONS

The Wireless Telegraphy (Exemption) (Amendment) (No.2) Regulations 2016

Made - - - -	***
Coming into force - -	***

The Office of Communications ("OFCOM"), in exercise of the powers conferred by section 8(3) of the Wireless Telegraphy Act 2006 ([a]) ("the Act"), makes the following Regulations.

Before making these Regulations OFCOM have given notice of their proposal to do so in accordance with section 122(4)(a) of the Act, published notice of their proposal in accordance with section 122(4)(b) of the Act and have considered the representations made to them before the time specified in that notice in accordance with section 122(4)(c) of the Act.

Citation and commencement

6.The Regulations may be cited as the Wireless Telegraphy (Exemption) (Amendment) (No.2) Regulations 2016 and shall come into force on [xxx].

Amendment of the Wireless Telegraphy (Exemption) Regulations 2003

7.—(1) The Wireless Telegraphy (Exemption) Regulations 2003([b]) are amended in accordance with the following paragraphs of this regulation.

(2) In Schedule 3, Part III, paragraph 3,—

(a) in sub-paragraph (d) (Long term evolution radiotelephones (LTE)) after the entry "2500—2690 MHz" in the list of frequency bands, insert the following entry—.

"— 2350—2390 MHz

— 3400—3800 MHz"; and

(b) in sub-paragraph (e) (Worldwide interoperability for microwave access radiotelephones (WiMax) after the entry "2500—2690 MHz in the list of frequency bands, insert the following entry—

([a]) 2006 c. 36.
([b]) S.I. 2003/74 amended by amended by S.I. 2003/2155, 2005/3481, 2006/2994, 2008/236, 2008/2426, 2010/2512, 2011/2950, 2013/1254.

"— 2350—2390 MHz

— 3400—3800 MHz".

8. In Schedule 3, Part IV (interface requirement), after the entry "IR 2072—UK Interface Requirement 2072 Terrestrial systems capable of providing electronic communications services in the band 2500 to 2690 MHz, published by the Office of Communications in March 2013" insert the following entries—

"— IR 2098 — UK Interface Requirement 2098 Terrestrial systems capable of providing electronic communications services in the 2.3 GHz band, published by the Office of Communications in February 2016.

— IR 2097 — UK Interface Requirement 2098 Terrestrial systems capable of providing electronic communications services in the 3.4 to 3.8 GHz band, published by the Office Communications in February 2016. "

Name

Address [Details]

Date For and by the authority of the Office of Communications

Annex 9

9 Glossary of abbreviations

CENELEC	European Committee for Electrotechnical Standardisation
CEPT	European Conference of Postal and Telecommunications Administrations
dBm	Decibels relative to one Milliwatt (0 dBm is equivalent to one Milliwatt)
EC	European Commission
ECC	Electronic Communications Committee
e.i.r.p	Equivalent isotropic radiated power
ERC	European Radiocommunications Committee
ERP	Effective radiated power
ETSI	European Technical Standards Institute
EU	European Union
GHz	Gigahertz (a frequency of one billion Hz)
Hz	Hertz (one complete cycle of a radio signal per second)
IR	Radio Interface Requirement
kHz	Kilohertz (a frequency of one thousand Hz)
LTE	Long Term Evolution
MHz	Megahertz (a frequency of one million Hz)
MSS	Mobile Satellite Service
mW	Milliwatt (one thousandth of a watt)
NoV	Notice of Variation
OJEU	Official Journal of the European Union
PMSE	Programme Making & and Special Events
R&TTE	Radio and Telecommunications Terminal Equipment Directive
RED	Radio Equipment Directive
RSC	Radio Spectrum Committee
TRP	Total Radiated Power
WiMAX	Worldwide Interoperability for Microwave Access
WT Act	Wireless Telegraphy Act 2006