Notice of Proposal to make the Wireless Telegraphy (Mobile Communications Services on Aircraft) (Exemption) Regulations 2014

Consultation

Publication date: 11 February 2014

Closing Date for Responses: 12 March 2014

Contents

Section 1

Executive Summary

1.1 This document consults on draft regulations, the Wireless Telegraphy (Mobile Communication Services on Aircraft) (Exemption) Regulations 2014 (the "Proposed Regulations"), that will enable the use of UMTS 2100 (3G) and LTE 1800 (4G) mobile devices onboard an aircraft on a licence exempt basis.

1.2 The use of mobile devices on aircraft has been permitted since 2008; however, it is limited to GSM 1800 (2G) technologies only. We are to extend the current licence exemption arrangements to cover the use of 3G and 4G mobile terminals when connecting to mobile communication services on aircraft (MCA) system by making the Proposed Regulations.

1.3 The Proposed Regulations implement the "Commission Implementing Decision of 12 November 2013 amending Decision 2008/294/EC to include additional access technologies and frequency bands for mobile communications services on Aircraft (MCA Services)" (2013/654/EU)[1] (the "Amending Decision"). All Member States are required to adopt this decision into national law by 12 May 2014.

1.4 On 7 April 2008, the European Commission (EC) published a Decision (2008/294/EC)[2] on harmonised conditions of spectrum use for the operation of mobile communication services on aircraft (MCA) in the Community (the "2008 MCA Decision"). The 2008 MCA Decision set out the technical and operational conditions necessary to allow the use of 2G on board an aircraft. We implemented the 2008 MCA Decision by making the Wireless Telegraphy (Mobile Communication Services on Aircraft) (Exemption) Regulations 2008 (the "MCA Exemption Regulations")[3].

1.5 In light of advancements in technology and increasing consumer demand for mobile data services, the EC amended the 2008 MCA Decision on 12 November 2013 by making the Amending Decision. This extends the harmonisation of MCA services to cover 3G technologies in 1920 -1980 MHz and 2110 - 2170 MHz (the "2100 MHz" frequency band) and 4G in 1710-1785 MHz and 1805 - 1880 MHz (the "1800 MHz" frequency band).

1.6 Ofcom is responsible for authorising civil use of the radio spectrum and achieve this by granting wireless telegraphy licences under the Wireless Telegraphy Act 2006 (the "WT Act") and by making Regulations exempting users of particular equipment from the requirement to hold such a licence[4]. In order to meet the requirements of the Amending Decision, we propose to make the Proposed Regulations. These, when adopted, would:

- revoke and replace the existing MCA Exemption Regulations;

[1]; http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2013:303:0048:0051:EN:PDF
[2] "Commission Decision 2008/294/EC of 7 April 2008 on harmonised conditions of spectrum use for the operation of mobile communication services on aircraft (MCA services) in the Community" http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2008:098:0019:0023:EN:PDF
[3] www.legislation.gov.uk/uksi/2008/2427/pdfs/uksi_20082427_en.pdf
[4] 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 use of such equipment is exempted.

- continue to permit, on a licence exempt basis, the use of 2G GSM technologies connecting to MCA services in the 1710 – 1785 MHz and 1805 – 1880 MHz (the "1800 MHz band") (subject to complying with various terms, provisions and limitations);

- extend the licence exemption regime to cover the use of 3G and 4G technologies (in the 2100 MHz and 1800 MHz bands) to connect to MCA services (subject to complying with various terms, provisions and limitations); and

- outline the technical parameters that the MCA systems in the 1800 MHz and 2100 MHz bands must meet in order to be exempt from the need to hold a wireless telegraphy licence.

1.7 We are also to extend the existing aeronautical licensing regime that authorises a licensed aircraft owner or operator to use MCA radio equipment to cover these new technologies. This will be done via the use of a Notice of Variation (NoV) to the aircraft radio WT Act licence. The NoV will set out the technical conditions under which MCA systems would be licensed for operation in a UK aircraft. A draft copy of the updated NoV is provided in Annex 8 of this document.

1.8 Interface Requirement (IR) 2070 containing the necessary technical parameters that equipment must meet has been updated to cover the aircraft base station and Network Control Unit (NCU) components for 3G and 4G technologies. A copy of the draft IR2070 can be found on our website[5].

1.9 As with all radio equipment on an aircraft the licensee is responsible for the installation, operation of the onboard MCA radio equipment and the avoidance of interference to terrestrial systems. Although the Proposed Regulations will enable the use of these technologies; the deployment of such systems is not mandatory. Ultimately any decisions on the roll out and deployment of the MCA systems is the responsibility of the aircraft owner or airline operator.

1.10 In accordance with the requirements of section 122(4) and (5) of the WT Act, this document gives notice of our intention to make the Proposed Regulations. We do not consider it appropriate to first conduct a policy consultation as implementing the Amending Decision is mandatory. Therefore, we are not seeking comments on the draft NoV or IR2070.

1.11 Comments on the Proposed Regulations are invited by 5pm on 12 March 2014. Subject to consideration of responses we intend to bring the new Regulations into force by May 2014. An impact assessment for the Proposed Regulations is available at Annex 5 to this document. The Proposed Regulations is included in this document at Annex 6. Further copies may be obtained from www.ofcom.org.uk or from Ofcom at Riverside House, 2a Southwark Bridge Road, London SE1 9HA.

[5] http://stakeholders.ofcom.org.uk/spectrum/technical/interface-requirements/draft_ir/

Section 2

Background on proposals

MCA services

2.1 Mobile communication services on aircraft (MCA) refers to the provision of electronic communication services[6] which enables airline passengers to use public communication networks (e.g. mobile handsets) during their flight without connecting directly with terrestrial mobile networks.

2.2 MCA systems consist of an onboard pico-cell base station and an onboard Network Control Unit (NCU). It is to this system that mobile terminals used by air passengers connect. The MCA system effectively replicates on an aircraft, the operation of a terrestrial base station.

2.3 The NCU is used to prevent the mobile terminals within the cabin from connecting to, or interfering with terrestrial base stations and ensure they connect only to an aircraft base station. Therefore, the mobile stations would not transmit any signal without being controlled by the onboard system. The on-going certification of MCA systems with respect to air safety has also been undertaken at EU level, via the European Aviation Safety Agency (EASA)[7].

2.4 However, it should be noted that there is no mandatory requirement on airlines to install MCA systems. Aircraft owners or operators decide what services they wish to offer their passengers.

2008 MCA Decision

2.5 Prior to 2008, communications services on an aircraft were only available via telephone systems owned by the airline. However, in 2008 the European Commission (EC) (2008/294/EC) (the "2008 MCA Decision")[8] introduced rules to harmonise the technical conditions for the use of GSM (2G) mobile terminals when connecting to a MCA service in the 1710 – 1785 MHz and 1805 – 1880 MHz (the "1800 MHz band").

2.6 The 2008 MCA Decision required Member States to make the GSM 1800 MHz frequency band available for MCA systems on a non-protected, non-interference basis according to specified technical conditions and the harmonised European Telecommunications Standards Institute (ETSI) standard or equivalent specifications.

2.7 From a spectrum management perspective the key objective was that MCA systems should not generate any harmful interference to terrestrial networks. To ensure minimal risk to terrestrial networks, the use of MCA services was restricted to aircraft at an altitude of 3000 metres or above.

[6] For definition of "electronic communications service" see Article 2(c) 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" (Framework Directive): http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2002:108:0033:0033:EN:PDF

[7] http://www.easa.europa.eu/communications/press-release.php

[8] http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2008:098:0019:0023:EN:PDF

2.8 We implemented the 2008 MCA Decision by making the Wireless Telegraphy (Mobile Communication Services on Aircraft) (Exemption) Regulations 2008 (the "MCA Exemption Regulations")[9]. The MCA Exemption Regulations permitted air passengers using MCA systems on 2G mobile devices in 1800 MHz band to be exempt from the requirement to be licensed in accordance with section 8 of the Wireless Telegraphy Act 2006 (the "WT Act"). As terrestrial use of mobile terminals is licence exempt; we decided that it would have been disproportionate to require a licence when using the same equipment onboard an aircraft[10].

2.9 However, both the aircraft base station and NCU are subject to the licensing requirement of section 8(1) of the WT Act. Authorisation of the base station and NCU on an aircraft was covered by a Notice of Variation (NoV) to the existing aircraft WT Act licence.

The Amending Decision

2.10 Since 2008, there have been major developments in technology and an increasing use of large amounts of data on mobile devices such as smartphones, tablets, laptops etc. As a result of these technological advancements and consumer developments the demand for air passengers to use UMTS 2100 (3G) and LTE 1800 (4G) technologies onboard an aircraft became apparent.

2.11 In 8 March 2013, the European Conference of Postal and Telecommunications Administrations (CEPT) provided a report (CEPT Report 48)[11] to the EC concluding that it would be possible to introduce (subject to the relevant technical conditions), 3G and 4G technologies in the 2100 MHz and 1800 MHz bands, respectively. They advised that the 2008 MCA Decision should be amended to include these technologies and frequencies.

2.12 Consequently, the EC adopted the CEPT recommendation and amended its 2008 MCA Decision by making the "Commission Implementing Decision of 12 November 2013 amending Decision 2008/294/EC to include additional access technologies and frequency bands for mobile communications services on aircraft (MCA services)" (2013/654/EU) (the "Amending Decision")[12].

2.13 The Amending Decision permits the use of 3G and 4G technologies to be used by passengers on board MCA equipped aircraft flying over the European Union (EU). Member States have until 12 May 2014 to implement the Amending Decision.

2.14 In order to avoid harmful interference to terrestrial networks, the Amending Decision provides the frequency bands and technical parameters to be used and complied with when MCA services are operated. These include the requirement that services can only be operated above an altitude of 3000 metres. The technical and operational conditions are based on the CEPT Report 48 and harmonised standard developed by ETSI or equivalent specifications.

2.15 The use of 4G technology in the 2.6 GHz (2570 - 2 690 MHz) band, is postponed, until 1 January 2017 pending agreement of the technical parameters for the NCU by

[9] www.legislation.gov.uk/uksi/2008/2427/pdfs/uksi_20082427_en.pdf
[10] http://stakeholders.ofcom.org.uk/consultations/mca08/?a=0
[11] "Report from CEPT to the European Commission in response to the Second Mandate to CEPT on mobile communication services on board aircraft (MCA)"; www.erodocdb.dk/Docs/doc98/official/pdf/CEPTREP048.PDF
[12] http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2013:303:0048:0051:EN:PDF

competent aeronautical certification authorities to allow the start of the production of the NCUs.

Implementation of the Amending Decision

2.16 We propose to implement the Amending Decision by making the Wireless Telegraphy (Mobile Communication Services on Aircraft) (Exemption) Regulations 2014 (the "Proposed Regulations"). Through the Proposed Regulations we intend to:

- revoke and replace the MCA Exemption Regulations;
- continue to permit on a licence exempt basis, the use of GSM technologies for MCA services in 1800 MHz band (subject to complying with various terms, provisions and limitations);
- permit on a licence exempt basis, the use of 3G and 4G technologies (in the 2100 MHz and 1800 MHz bands) to be included for MCA services (subject to complying with various terms, provisions and limitations); and
- set out the technical and operational parameters that the MCA system in the 2100 MHz and 1800 MHz bands must meet in order to be exempt from the need to hold a wireless telegraphy licence

2.17 In line with Article 2 of the Amending Decision, we intend to implement the requirements in relation to the NCU parameters for the 2.6 GHz band from 1 January 2017, by giving notice of our intention to do so, nearer the implementation date.

Notice of Proposals

2.18 We are responsible for authorising civil use of the radio spectrum and achieve this by granting wireless telegraphy licences under the WT Act and by making regulations exempting users of particular equipment from the requirement to hold such a licence.

2.19 Under section 8(1) of the WT Act, it is an offence to install or use equipment to transmit without holding a licence granted by us unless the use of such equipment is exempted. We can exempt the installation or use of wireless telegraphy equipment by making Regulations under section 8(3) of the WT Act.

2.20 Under section 8(4) of the WT Act, we have to make regulations to exempt equipment 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.

2.21 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.

2.22 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 propose to make the regulations in question, set out their general effects, specify an address from which a copy of the proposed regulations or order may be obtained, and specify a time period of at least one month during which any representations with respect to the proposal must be made to us.

Document structure

2.23 The document is structured as follows:

- Section 3 sets out the general effects of the Proposed Regulations;
- A Regulatory Impact Assessment (RIA) for the Proposed Regulations 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 a draft of the Proposed Regulations;
- Annex 7 contains a copy of the Amending Decision can be found; and
- A copy of the draft amendment to the NoV for an aircraft licence is in Annex 8.

Next steps

2.24 We did not consider it appropriate to first conduct a policy consultation prior to drafting the Proposed Regulations, as implementing the Amending Decision is a mandatory requirement for all Member States. The deadline for responses to this Notice is **5pm** on **12 March 2014**. Having, taken account of any comments on the Proposed Regulations, we expect to release a statement on this notice by **April 2014** and subsequently to make, and bring into force the new regulations.

Section 3

General effects of the draft Wireless Telegraphy(Mobile Communication Services on Aircraft) (Exemption)Regulations 2014

The Legislative Framework

3.1 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.

Extent of application

3.2 The Proposed Regulations will apply in the United Kingdom.

The Proposed Regulations

3.3 A draft of the Proposed Regulations is set out in Annex 6

3.4 The Proposed Regulations will exempt the use of mobile terminals on-board aircraft pursuant to section 8(4) of the Wireless Telegraphy Act. The Proposed Regulations mirrors the technical parameters and standards set in the MCA Amending Decision. It sets the terms, provisions and limitations to be complied with for the on-board MCA system.

3.5 Regulation 1 sets the date when the Proposed Regulations would come into force;

3.5.1 Regulation 1(2) sets out the extent of application of the Proposed Regulations.

3.6 Regulation 2 revokes the 2008 MCA Exemption Regulations.

3.7 Regulation 3 provides interpretation of the terms used in the Proposed Regulations.

3.8 Regulation 4 sets the permission to use any apparatus on board an aircraft without the need to hold a licence subject to the terms, provisions and limitations set out in Regulations 5.

3.9 Regulation 5 mirrors the technical parameters and standards set in the Amending Decision. It sets the terms, provisions and limitations to be complied with for the on-board MCA system.

3.9.1 Regulation 5(1) provides that the exemption shall apply if the apparatus comply with the ETSI standards listed therein or equivalent specification.

3.9.2 Regulation 5(2) sets out the frequency bands the apparatus must operate in.

3.9.3 Regulation 5(3) outlines what the apparatus must be used for, when it can be used, and the applicable operational and technical requirements (as set out in the Schedule of the Proposed Regulations).

3.9.4 Regulation 5(4) provides that the apparatus must not cause or contribute to undue interference to other wireless telegraphy.

3.9.5 Regulation 5(5) sets out the requirements in relation to the network that the apparatus must connect directly to (as set out in the Schedule of the Proposed Regulations).

Do you agree that the drafting of the Proposed Regulations correctly gives effect to the European Commission's Amending Decision referred to in this document and to the other intentions set out in this document?

Annex 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 12 March 2014**.

A1.2 Ofcom strongly prefers to receive responses using the online web form at http://stakeholders.ofcom.org.uk/consultations/mca-exemption/howtorespond/form, as this helps us to process the responses quickly and efficiently. We would also be grateful if you could assist us by completing a response 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
Spectrum Policy Group
Ofcom
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 020 783 4650.

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/about/accoun/disclaimer/

Next steps

A1.10 Following the end of the consultation period, Ofcom intends to publish a statement in April 2014.

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/static/subscribe/select_list.htm

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 Graham Howell, Secretary to the Corporation, who is Ofcom's consultation champion:

Graham Howell
Ofcom
Riverside House
2a Southwark Bridge Road
London SE1 9HA

Tel: 020 7981 3601

Email: Graham.Howell@ofcom.org.uk

Annex 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

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 www.ofcom.org.uk/consult/.

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

Consultation question

Introduction

A4.1 As required by section 122 of the WT Act, 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 (Mobile Communication Services on Aircraft) (Exemption) Regulations 2014.

Do you agree that the drafting of the Proposed Regulations correctly gives effect to the European Commission's Amending Decision referred to in this document and to the other intentions set out in this document?

Annex 5

Regulatory Impact Assessment

Introduction

A5.1 In accordance with Government practice, where a statutory regulation is proposed, a Regulatory Impact Assessment ("RIA") must be undertaken.

A5.2 The analysis presented here, represents an RIA as defined by section 7 of the Communications Act 2003 (the "Comms Act") for the Wireless Telegraphy (Mobile Communication Services on Aircraft) (Exemption) Regulations 2014 (the "Proposed Regulations").

A5.3 RIAs provide a valuable way of assessing different options for regulation and showing why the preferred option was chosen. They form part of best practice policy-making and are commonly used by other regulators. This is reflected in section 7 of the Comms 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. In accordance with section 7 of the Comms Act, in producing this RIA, we have had regard to such general guidance as we consider appropriate including related Cabinet Office guidance. For further information about our approach to impact assessments, see the guidelines, Better policy-making: Ofcom's approach to impact assessment, which are on our website: http://www.ofcom.org.uk/consult/policy_making/guidelines.pdf.

Background

A5.5 In the UK, we are responsible for authorising civil use of the radio spectrum and achieve this by granting wireless telegraphy licences under the Wireless Telegraphy Act 2006 (the "WT Act") and by making regulations exempting users of particular equipment from the requirement to hold such a licence. Under section 8(1) of the WT Act, it is an offence to install or use equipment to transmit without holding a licence granted by us, unless the use of such equipment is exempted. However, under section 8(4) of the WT Act, we have to make regulations to exempt equipment 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.

A5.6 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.

Proposal

3.10 This RIA relates our proposals with regards to mobile communication services on aircraft (MCA). We propose to make the Proposed Regulations by revoking and replacing the Wireless Telegraphy (Mobile Communication Services on Aircraft) (Exemption) Regulations 2008 (the "MCA Exemption Regulations")[13]. The Proposed Regulations will comply with "Commission Implementing Decision of 12 November 2013 amending Decision 2008/294/EC to include additional access technologies and frequency bands for mobile communications services on Aircraft (MCA Services)" (2013/654/EU) (the "Amending Decision")[14].

A5.7 The Proposed Regulations will revoke and replace the MCA Exemption Regulations in order to comply with the Amending Decision by permitting the use of mobile devices on a licence exempt basis UMTS2100 (3G) and LTE1800 (4G) on board MCA equipped aircraft flying over the European Union (EU) above an altitude of 3000 metres in addition to GSM1800 (2G) (subject to complying with certain technical and operational requirements).

The citizen and/or consumer interest

A5.8 Our principal duty under section 3 of the Comms 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.

A5.9 We must, in particular, have regard to securing the optimal use for wireless telegraphy of spectrum and have regard to the principle under which all regulatory activities should be proportionate, consistent and targeted only at cases in which action is needed. We have considered the wider impact beyond immediate stakeholders in the radiocommunications community. We believe that Proposed Regulations will be of benefit to consumers for the following reasons:

i) In light of the progress made in technological advancements, we are proposing to authorise the licence exempt use of more spectrum on board aircrafts, in flight so that air passengers can use their mobile devices for transferring large amounts of data;

[13] 2008 No. 2427, www.legislation.gov.uk/uksi/2008/2427/pdfs/uksi_20082427_en.pdf
[14] See Annex 7 of this document

ii) The proposals concern the use of mobile devices using MCA systems 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

iii) The Proposed Regulations allows for the mutual recognition of Member States' authorisations for MCA on the basis of common technical and authorisation requirements. This will make communication more assessable to citizens and consumers on board aircrafts across the EU. If the UK did not participate in this approach, it might be argued that UK businesses and consumers would be disadvantaged in not having access to these innovative services.

A5.10 We are required by statute to assess the impact of all our functions, policies, projects and practices on race, disability and gender equality – an Equality Impact Assessment (EIA) is our way of fulfilling these obligations.

A5.11 We note that there is no available evidence to suggest the decision to make changes to the MCA Exemption Regulations would have a significantly greater direct financial impact on groups including based on gender, race or disability or for consumers in Northern Ireland relative to consumers in general.

A5.12 We have not carried out a full Equality Impact Assessment in relation to race equality or under the Northern Ireland Equality Scheme and disability equality schemes at this stage. This is because we are not aware that the proposals being considered here are intended (or would, in practice) have a significant differential impact on different gender or racial groups, on consumers in Northern Ireland or on disabled consumers compared to consumers in general.

Ofcom's policy objective

A5.13 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 an individual licence 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 WT Act licence provided they comply with the terms of the Regulations.

A5.14 In accordance with the WT Act, we aim to exempt from licensing the use of specified equipment where it is not likely that such use will cause undue interference to other legitimate users of the radio spectrum. We are also required to implement EU legislation relating to radio spectrum and from time to time, this requires licence exemption arrangements to be changed. As a Member State, the UK is bound by the terms of the Amending Decision and the requirement to implement them.

Options considered

A5.15 The options open to Ofcom in relation to the implementation of the Amending Decision are as follows:

- to make the Proposed Regulations that are compliant with the Amending Decision; or
- to do nothing.

Analysis of the different options

Make new regulations

A5.16 The European Commission (EC) defined the technical and authorisation parameters which will allow MCA to be launched across Europe. The outcome of this Amending Decision is a mandatory requirement for Member States to make 3G and 4G MHz spectrum available for MCA. This requirement cannot be disregarded and Member States are expected to authorise the use of MCA services.

A5.17 The most efficient route to mandatory compliance is to make the Proposed Regulations as consistent with the Amending Decision as closely as possible.

Costs to business

A5.18 Costs to business are likely to be lower under a licence-exemption approach than the requirement for users to obtain individual licences. Licence-exemption represents the least cost regulatory approach to authorisations on the use of spectrum. For example if use of spectrum is authorised through a WT Act licence, businesses face administrative costs associated with applying for the licence. In addition there are licence charges that must be paid on the initial issue of the licence and on its renewal.

Costs to Ofcom

A5.19 There are one-off administrative costs associated with making Regulations. We considered that the implementation costs to be low, both in absolute terms and in comparison to licensing alternatives that might require an auction or the maintenance of an annually renewable licence scheme if licences are awarded on a first come first served basis. Moreover, the costs such as they are will also be offset by the benefits to business and consumer outlined above.

A5.20 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 quantitive and qualitively, outweighing any costs we consider to be associated with correct implementation.

Do nothing

A5.21 By doing nothing, we would be in breach of the Amending Decision and could be open to infraction proceedings initiated by the EC or others.

The preferred option

A5.22 The preferred option therefore is to make the Proposed Regulations as indicated in order to comply with the Amending Decision. The benefits of this option are that the UK remains compliant with European law. Furthermore, it will continue to allow air passengers to benefit from use of their mobile devices on MCA systems in 2G in 1800 GHz band and further benefit from more access to data services through 3G and 4G technologies in 2100 and 1800 GHz bands respectively.

Annex 6

Draft Wireless Telegraphy(Mobile Communication Services on Aircraft) (Exemption) Regulations 2014

D R A F T S T A T U T O R Y I N S T R U M E N T S

2014 No. XX

ELECTRONIC COMMUNICATIONS

The Wireless Telegraphy (Mobile Communication Services on Aircraft) (Exemption) Regulations 2014

Made - - - -	*XX 2014*
Coming into force - -	*XX 2014*

The Office of Communications ("OFCOM") make the following Regulations in exercise of the power conferred by section 8(3) of the Wireless Telegraphy Act 2006([15]) ("the Act").

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.—(1) These Regulations may be cited as the Wireless Telegraphy (Mobile Communication Services on Aircraft) (Exemption) Regulations 2014 and shall come into force on XX 2014.

(2) These Regulations shall extend to the Isle of Man and the Channel Islands.

Revocation

2.The Wireless Telegraphy (Mobile Communications Services on Aircraft) (Exemption) Regulations 2008 ([16]) are hereby revoked.

Interpretation

3.In these Regulations—

"aircraft BTS" means a base transceiver station located in an aircraft ([17]);

([15]) 2006 c. 36.
([16]) S.I. 2008/2427.
([17]) Commonly known as "Node B" for UMTS and LTE systems.

"apparatus" means wireless telegraphy apparatus;

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

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

"ETSI" means the European Telecommunications Standards Institute;

"kHz" means kilohertz;

"MHz" means megahertz;

"mobile communication services on aircraft" means electronic communications services provided by an undertaking to enable airline passengers to use public communications networks during flight without establishing direct connections with terrestrial mobile networks;

"network control unit" means equipment located in an aircraft that ensures that signals transmitted by ground based mobile electronic communication systems are not detectable within the cabin by raising the noise floor inside the cabin in mobile communication receive bands;

"relevant network" means an electronic communications network that includes an aircraft BTS and a network control unit

"the 1800 MHz band" refers to frequency bands 1710-1785 MHz (uplink) and 1805-1880 MHz (downlink); and

"the 2100 MHz band" refers to the frequency bands 1920-1980 MHz (uplink) and 2110-2170 MHz (downlink).

Exemption

4. The use of any apparatus on board an aircraft which is—

(a) an aircraft registered in the United Kingdom, Isle of Man, or any of the Channel Islands; and

(b) flying over the British Islands and the territorial waters adjacent thereto, or, for the time being, beyond the British Islands and the territorial waters adjacent thereto;

is hereby exempt from the provisions of section 8(1) of the Wireless Telegraphy Act 2006 where the terms, provisions and limitations in regulation 5 are met.

Terms, provisions and limitations

5.—(1) The apparatus must comply with the GSM standard EN 301 502 ([18]) EN 301 511 ([19]) EN 302 480 ([20]) ("GSM apparatus"), the UMTS standard EN 301 908-1 ([21]), EN301 908-2 ([22]), EN 301 908-3 ([23]) and EN301 908-11 ([24]) ("UMTS apparatus"), or the LTE standard EN 301 908- 1, EN301 908-13 ([25]), EN301 908-14 ([26]) and EN301 908-15 ([27]) ("LTE apparatus"), published by ETSI (or equivalent specifications).

(2) The apparatus must only operate in the 1800 MHz band or the 2100 MHz band.

(3) The apparatus must only be used—

(a) for mobile communication services on aircraft;

(b) when the aircraft is three thousand metres or more above the ground;

(c) where the following operational requirements are met—

([18]) EN 301 502 (Version 11.0.1) was published on 15 November 2013.
([19]) EN 301 511 (Version 9.0.2) was published on 20th March 2003.
([20]) EN 302 480 (Version 1.1.2) was published on 24th April 2008.
([21]) EN 301 908-1 (Version 6.2.1) was published on 15th April 2013.
([22]) EN301 908-2 (Version 6.2.1) was published on 15 October 2013.
([23]) EN301 908-3 (Version 6.2.1) was published on 15 October 2013.
([24]) EN301 908-11 (Version 5.2.1) was published on 19 July 2011.
([25]) EN301 908-13 (Version 6.2.1) was published on 15 October 2013.
([26]) EN301 908-14 (Version 6.2.1) was published on 15 October 2013.
([27]) EN301 908-15 (Version 5.2.1) was published on 19 July 2011.

(i) the aircraft BTS, while in operation, limits the transmission power of all GSM apparatus to a nominal value of 0 dBm/200 kHz at all stages of communication, including initial access;

(ii) the aircraft BTS, while in operation, limits the transmission power of all LTE apparatus in the 1800 MHz band to a nominal value of 5 dBm/5MHz at all stages of communication;

(iii) the aircraft BTS, while in operation, limits the transmission power of all UMTS apparatus in the 2100 MHz band to a nominal value of – 6 dBm/3.84 MHz at all stages of communication and the maximum number of users does not exceed 20;

(d) where the e.i.r.p. outside the aircraft emanating from the apparatus transmitting in the frequency bands specified in the headings of Columns 2 to 4 of Table 1 of the Schedule, does not, at each of the heights above ground specified in Column 1 of that Table, exceed the value specified in each of Columns 2, 3 or 4 of that Table.

(4) The apparatus must not cause or contribute to undue interference to any wireless telegraphy.

(5) The apparatus must connect directly to a relevant network in which—

(a) the network control unit prevents the apparatus, when operating on one of the frequency bands listed in Column 1 of Table 2 of the Schedule, from registering on that band with the types of system on the ground which are listed adjacent to that band in Column 2 of that Table;

(b) the network control unit and the aircraft BTS operate such that their total e.i.r.p. outside the aircraft does not, at each height above ground specified in Column 1 of Table 3 of the Schedule, and at each of the frequency bands specified in the heading of Columns 2 to 6 of that Table, exceed the value specified in Columns 2 to 6 of that Table;

(c) the aircraft BTS complies with the GSM standards EN 301 502 and EN 302 480, the UMTS standard EN 301 908-1, EN 301 908-3 and EN 301 908-11, or the LTE standard EN 301 908-1, EN 301 908-14 and EN 301 908-15 , published by ETSI (or equivalent specifications); and

(d) the network control unit complies with the standard EN 302 480 published by ETSI (or equivalent specification).

[Name] Group Director, Spectrum Policy Group, Office of Communications
XX 2014 For and by authority of the Office of Communications

SCHEDULE

Table 1

Column 1 *Height above ground in metres*	*Column 2* *Maximum e.i.r.p, from the GSM mobile terminal, for the 1800 MHz band in 0 dBm/200 kHz*	*Column 3* *Maximum e.i.r.p. for the LTE mobile terminal, for the 1800 MHz band in dBm/5 MHz*	*Column 4* *Maximum e.i.r.p, from the UMTS mobile terminal, for the 2100 MHz band in dBm/3, 84 MHz*
3000	- 3,3	1,7	3,1
4000	-1,1	3,9	5,6
5000	0,5	5	7
6000	1,8	5	7
7000	2,9	5	7
8000	3,8	5	7

Table 2

Column 1 *Frequency band*	*Column 2* *Systems on the ground*
460-470 MHz	Code Division Multiple Access 2000 (also known as CDMA 2000) Fast Low-latency Access with Seamless Handoff Orthogonal Frequency Division Multiplexing (also known as FLASH OFDM)
791-821 MHz	LTE
921-960 MHz	GSM UMTS LTE Worldwide Interoperability for Microwave Access (also known as WiMAX)
1805-1880 MHz	GSM UMTS LTE Worldwide Interoperability for Microwave Access (also known as WiMAX)

2110-2170 MHz	UMTS, LTE
2570-2620 MHz	UMTS, LTE, Worldwide Interoperability for Microwave Access (also known as WiMAX)
2620-2690	UMTS, LTE

Table 3

Column 1	*Column 2*	*Column 3*	*Column 4*	*Column 5*	*Column 6*
Height above ground in metres	*Maximum e.i.r.p. for the frequency band 460-470 MHz in dBm/1.25 MHz*	*Maximum e.i.r.p. for the frequency band 791-821 MHz in dBM/10 MHz*	*Maximum e.i.r.p. for the frequency band 921-960 MHz in dBm/200 kHz*	*Maximum e.i.r.p. for the frequency band 1805-1880 MHz in dBm/200 kHz*	*Maximum e.i.r.p for the frequency band 2110-2170 MHz in dBm/3.84 MHz*
3000	-17.0	-0,87	-19.0	-13.0	1.0
4000	-14.5	1,63	-16.5	-10.5	3.5
5000	-12.6	3,57	-14.5	-8.5	5.4
6000	-11.0	5,15	-12.9	-6.9	7.0
7000	-9.6	6,49	-11.6	-5.6	8.3
8000	-8.5	7,65	-10.5	-4.4	9.5

Annex 7

European Commission Amending Decision

L 303/48 EN Official Journal of the European Union 14.11.2013

COMMISSION IMPLEMENTING DECISION

of 12 November 2013

amending Decision 2008/294/EC to include additional access technologies and frequency bands for mobile communications services on aircraft (MCA services)

(notified under document C(2013) 7491)

(Text with EEA relevance)

(2013/654/EU)

THE EUROPEAN COMMISSION,

Having regard to the Treaty on the Functioning of the European Union,

Having regard to Decision No 676/2002/EC of the European Parliament and of the Council of 7 March 2002 on a regulatory framework for radio spectrum policy in the European Community (Radio Spectrum Decision) [1], and in particular Article 4(3) thereof,

Whereas:

(1) Commission Decision 2008/294/EC [2] sets in its Annex technical and operational conditions necessary to allow the use of GSM on board aircraft.

(2) The development of enhanced means of communications supported by technical progress would improve the capacity for all citizens to be connected everywhere and at all time. It would also contribute to fulfilling the objectives of the Digital Agenda for Europe [3] and of the Europe 2020 strategy.

(3) In order to prepare for the use of the latest available technologies and frequencies for the provision of MCA services, the Commission gave a mandate on 5 October 2011 to the European Conference of Postal and Telecommunications Administrations ('the CEPT') pursuant to Article 4(2) of Decision No 676/2002/EC to assess technical compatibility between the operation of airborne UMTS systems and other feasible airborne technologies such as LTE or WiMax in frequency bands such as the 2 GHz and the 2,6 GHz band, and potentially affected radio services.

(4) Pursuant to that mandate, the CEPT provided its report on 8 March 2013. The CEPT Report 48 concluded that it would be possible to introduce, subject to the relevant technical conditions, UMTS and LTE technologies in the 2 100 MHz and 1 800 MHz bands, respectively. Therefore, the Annex to Decision 2008/294/EC should be amended, based on the results of the CEPT Report 48, to include these technologies and allow their use on board aircraft.

(5) This Decision should apply as soon as possible considering the increasing use of LTE and UMTS technologies in the Union.

(6) An appropriate protection by limiting the transmission power of the MCA services should be provided to existing potentially affected radio services. However, since the use of the upgraded network control unit (NCU) for the 2,6 GHz band would be delayed until the technical constraints are agreed by the competent aeronautical certification authorities to allow the start of the production of the NCUs and until airworthiness certification has been completed for each type of aircraft, the application of the NCU parameters for the 2,6 GHz band could be postponed until 1 January 2017.

(7) MCA technical specifications should continue to match technological progress.

(8) Decision 2008/294/EC should therefore be amended accordingly.

(9) The measures provided for in this Decision are in accordance with the opinion of the Radio Spectrum Committee,

HAS ADOPTED THIS DECISION:

Article 1

The Annex to Decision 2008/294/EC is replaced by the text in the Annex to this Decision.

Article 2

The values for the band 2 570-2 690 MHz set in Table 3 of the Annex to this Decision shall apply from 1 January 2017.

[1] OJ L 108, 24.4.2002, p. 1.
[2] Commission Decision 2008/294/EC of 7 April 2008 on harmonised conditions of spectrum use for the operation of mobile communication services on aircraft (MCA services) in the Community (OJ L 98, 10.4.2008, p. 19).
[3] COM(2010) 245 final.

Article 3

As early as possible, and no later than six months following the entry into force of this Decision, the Member States shall make the frequency bands listed in Table 1 in the Annex available for MCA services on a non-interference and non-protected basis, provided such services meet the conditions set out in the Annex.

Article 4

The Member States shall set the minimum height above ground for any transmission from an MCA system in operation in accordance with Section 3 of the Annex.

Member States may impose greater minimum heights of MCA operation where justified by national topographical and ground network deployment conditions. This information, supported by appropriate justification, shall be notified to the Commission within four months of adoption of this Decision and shall be published in the *Official Journal of the European Union*.

Article 5

This Decision is addressed to the Member States.

Done at Brussels, 12 November 2013.

For the Commission
Neelie KROES
Vice-President

ANNEX

1. FREQUENCY BANDS AND SYSTEMS ALLOWED FOR MCA SERVICES

Table 1

Type	Frequency	System
GSM 1 800	1 710-1 785 MHz (uplink) 1 805-1 880 MHz (downlink)	GSM complying with the GSM Standards as published by ETSI, in particular EN 301 502, EN 301 511 and EN 302 480, or equivalent specifications.
UMTS 2 100 (FDD)	1 920-1 980 MHz (uplink) 2 110-2 170 MHz (downlink)	UMTS complying with the UMTS Standards as published by ETSI, in particular EN301 908-1, EN 301 908-2, EN 301 908-3 and EN 301 908-11, or equivalent specifications.
LTE 1 800 (FDD)	1 710-1 785 MHz (uplink) 1 805-1 880 MHz (downlink)	LTE complying with LTE Standards, as published by ETSI, in particular EN301 908-1, EN301 908-13, EN301 908-14 and EN301 908-15, or equivalent specifications.

2. PREVENTION OF CONNECTION OF MOBILE TERMINALS TO GROUND NETWORKS

During the period when operation of MCA services is authorised on an aircraft, mobile terminals receiving within the frequency bands listed in Table 2 must be prevented from attempting to register with mobile networks on the ground.

Table 2

Frequency band (MHz)	Systems on the ground
460-470	CDMA2000, FLASH OFDM
791-821	LTE
921-960	GSM, UMTS, LTE, WiMAX
1 805-1 880	GSM, UMTS, LTE, WiMAX
2 110-2 170	UMTS, LTE
2 570-2 620	UMTS, LTE, WiMAX
2 620-2 690	UMTS, LTE

3. TECHNICAL PARAMETERS

(a) **Equivalent isotropic radiated power (e.i.r.p.), outside the aircraft, from the NCU/aircraft BTS**

Table 3

The total e.i.r.p., outside the aircraft, from the NCU/aircraft BTS/aircraft Node B must not exceed:

Height above ground (m)	Maximum e.i.r.p. density produced by NCU/aircraft BTS/aircraft Node B outside the aircraft					
	460-470 MHz	791-821 MHz	921-960 MHz	1 805-1 880 MHz	2 110-2 170 MHz	2 570-2 690 MHz
	dBm/1,25 MHz	dBm/10 MHz	dBm/200 kHz	dBm/200 kHz	dBm/3,84 MHz	dBm/4,75 MHz
3 000	– 17,0	– 0,87	– 19,0	– 13,0	1,0	1,9
4 000	– 14,5	1,63	– 16,5	– 10,5	3,5	4,4

Height above ground (m)	Maximum e.i.r.p. density produced by NCU/aircraft BTS/aircraft Node B outside the aircraft					
	460-470 MHz	791-821 MHz	921-960 MHz	1 805-1 880 MHz	2 110-2 170 MHz	2 570-2 690 MHz
	dBm/1,25 MHz	dBm/10 MHz	dBm/200 kHz	dBm/200 kHz	dBm/3,84 MHz	dBm/4,75 MHz
5 000	– 12,6	3,57	– 14,5	– 8,5	5,4	6,3
6 000	– 11,0	5,15	– 12,9	– 6,9	7,0	7,9
7 000	– 9,6	6,49	– 11,6	– 5,6	8,3	9,3
8 000	– 8,5	7,65	– 10,5	– 4,4	9,5	10,4

(b) **Equivalent isotropic radiated power (e.i.r.p.), outside the aircraft, from the onboard terminal**

Table 4

The e.i.r.p., outside the aircraft, from the mobile terminal must not exceed:

Height above ground (m)	Maximum e.i.r.p., outside the aircraft, from the GSM mobile terminal in dBm/200 kHz	Maximum e.i.r.p., outside the aircraft, from the LTE mobile terminal in dBm/5 MHz	Maximum e.i.r.p., outside the aircraft, from the UMTS mobile terminal in dBm/3,84 MHz
	GSM 1 800 MHz	LTE 1 800 MHz	UMTS 2 100 MHz
3 000	– 3,3	1,7	3,1
4 000	– 1,1	3,9	5,6
5 000	0,5	5	7
6 000	1,8	5	7
7 000	2,9	5	7
8 000	3,8	5	7

(c) **Operational requirements**

I. The minimum height above ground for any transmission from an MCA system in operation must be 3 000 metres.

II. The aircraft BTS, while in operation, must limit the transmit power of all GSM mobile terminals transmitting in the 1 800 MHz band to a nominal value of 0 dBm/200 kHz at all stages of communication, including initial access.

III. The aircraft Node B, while in operation, must limit the transmit power of all LTE mobile terminals transmitting in the 1 800 MHz band to a nominal value of 5 dBm/5 MHz at all stages of communication.

IV. The aircraft Node B, while in operation, must limit the transmit power of all UMTS mobile terminals transmitting in the 2 100 MHz band to a nominal value of – 6 dBm/3,84 MHz at all stages of communication and the maximum number of users should not exceed 20.

Annex 8

Draft amendment to the Notice of Variation (NoV) of aircraft licence

WIRELESS TELEGRAPHY ACT 2006

VARIATION OF AIRCRAFT RADIO LICENCE
FOR THE PURPOSE OF INSTALLING AND USING AN AIRCRAFT-BASE TRANSCEIVER STATIONS AND NETWORK CONTROL UNITS ON BOARD AN AIRCRAFT

1 Licence reference details

Sector/class/product	**XXXXXX**
Licence number	**[system generated licence number]**
Aircraft Registration	**[taken from AC Reg field]**
Aircraft Type	**[taken from Aircraft Type field]**
Licensee Name	**[Licensee name]**
Licensee address	**[Licensee address]**
Date of issue	**[date licence first issued]**
Licence start date	**[date system generated licence]**
Date of issue of this variation	**Xx xxxxxxx 201x**

2 Ofcom, in exercise of the power conferred by Schedule 1, paragraph 6 of the Wireless Telegraphy Act 2006 ("the Act"), hereby varies the Aircraft Radio Licence identified above ("the Licence"), in accordance with Schedule 1 of the Act.

3 General

(a) Terms and expressions defined in the Licence shall have the same meaning herein except where the context requires otherwise.
(b) This Variation shall be read as an integral part of the Licence and the following additional terms shall apply in respect of the aircraft-BTS and NCU.
(c) This Variation forms part of the Licence and must be attached to the Licence.
(d) This Variation replaces and supersedes any Variation issued to vary the Licence for the purpose of installing and using aircraft-base transceiver stations and network control units on board an aircraft.
(e) This variation does not grant any authorisation on its own. It has effect only when read together with the Licence, which it varies.
(f) This Variation shall remain in force unless
  (i) Ofcom revokes the licence; or
  (ii) Ofcom further varies the Licence, such that the effect of this Variation is altered or cancelled; or
  (iii) the licensee surrenders the licence; or
  (iv) the licensee requests Ofcom further to vary the licence such that the effect of this Variation is altered or cancelled.

4 Variation

The Licence shall be varied as and from the Date of issue of this Notice of Variation, such that the Licence shall be read and construed as if the following rows are added after the last row in the table (headed "Radio Equipment") in clause 2 "Licence Terms and Conditions" of the Licence:

Radio Equipment	Frequency Range (MHz)	
	From	To
Aircraft-BTS	1710 1805 1920 2110	1785 1880 1980 2170
NCU	460 791 921 1805 2110 2620	470 821 960 1880 2170 2690

5 Terms and conditions

The Licence shall be varied as and from the Date of Issue of this Notice of Variation, such that the additional terms below shall apply in respect of the establishment, installation and use of the radio equipment described in the table in clause 4 above:

(a) The aircraft-BTS and NCU shall be operated on a 'non-interference non-protected' basis;
(b) Appropriate measures must be taken to ensure that mobile terminals on board are switched off when the aircraft-BTS and NCU are not in operation and that all other mobile terminal radio equipment not controlled by the aircraft-BTS and NCU remain switched off during all phases of the flight;
(c) The licensee must keep records of when the aircraft-BTS and NCU are switched on and off for a minimum period of six months and submit these to Ofcom at such intervals as Ofcom shall notify to the Licensee;
(d) The operation of the aircraft-BTS and NCU shall be in conformity with UK Interface Requirement IR 2070 – Mobile Communication Services on Aircraft, published by Ofcom;
(e) The aircraft-BTS and NCU shall comply with the technical and operational requirements specified in Regulation 5 of The Wireless Telegraphy (Mobile Communication Services on Aircraft) (Exemption) Regulations 2014[28];
(f) Operation of the radio equipment within the territory of administrations other than the UK, Isle of Man, Guernsey or Jersey, or their respective territorial sea, or, radio equipment on board an aircraft registered within the territory of administrations other than the UK, Isle of Man, Guernsey or Jersey, is subject to the regulations and authorisations of those administrations.

6. Interpretation

(a) GSM means Global System for Mobile Communications;
(b) UMTS means Universal Mobile Telecommunication System;
(c) LTE means Long Term Evolution;
(d) "non-interference and non-protected basis" means that no harmful interference may be caused to any radiocommunication service and that no claim may be made for protection of these devices against harmful interference originating from radiocommunication services;

(e) "Network Control Unit (NCU)" means equipment located in the aircraft that ensures that signals transmitted by ground-based mobile systems are not

[28] S. I. 2014/XX

receivable within the cabin by raising the noise floor inside the cabin in mobile receive bands;

(f) "aircraft-BTS" means a base transceiver station located in an aircraft.[29]

Issued by the CAA on behalf of Ofcom

Radio Licensing
Civil Aviation Authority
CAA House
45-59 Kingsway
London WC2B 6TE

[29] Commonly known as “Node B” for UMTS and LTE technologies.

Annex 9

Glossary

- CEPT - European Conference of Postal and Telecommunications Administrations
- EASA - European Aviation Safety Agency
- ETSI - European Telecommunications Standards Institute
- GSM - Global System for Mobile Communications
- LTE - Long Term Evolution
- NCU - Network Control Unit
- MHz – Megahertz
- UMTS - Universal Mobile Telecommunications System