



Notice of proposal to make the  
Wireless Telegraphy (Mobile  
Communication Services on Aircraft)  
(Exemption) Regulations 2008

Consultation

Publication date: 28 July 2008

Closing Date for Responses: 29 August 2008



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## Section 1

# Executive summary

- 1.1 This document consults on draft regulations to exempt the use of mobile terminals when connecting to a Mobile Communications on Aircraft (MCA) service. This notice outlines our intention to make the Wireless Telegraphy (Mobile Communication Services on Aircraft) (Exemption) Regulations 2008 (“the Proposed Regulations”).
- 1.2 The introduction of licence exemption for mobile terminals when connecting to an MCA service was outlined in our consultation “Mobile communications on board aircraft: consultation on the introduction of mobile services on aircraft,” published on 18 October 2007,<sup>1</sup> and confirmed in our statement “Mobile communications on board aircraft (MCA): Ofcom statement on authorising MCA services,” published on 26 March 2008.<sup>2</sup> This is in line with European 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 (“the MCA Decision”).<sup>3</sup>
- 1.3 Mobile terminals are already licence exempt when connected to terrestrial networks. The Proposed Regulations will create a new exemption to allow terminals to connect to an MCA service on a licence-exempt basis providing they meet the technical requirement as set out in Interface Requirement 2070.<sup>4</sup>
- 1.4 This consultation is specific to the drafting of the Proposed Regulations and does not address the general policy on allowing MCA services in the UK or the licensing regime that will apply to aircraft wishing to deploy these services.
- 1.5 A Regulatory Impact Assessment (RIA) for the Proposed Regulations is at annex 4 to this document. The RIA sets out the risks, costs and benefits of our proposals and the effects that these will have on the costs to business.
- 1.6 A copy of the MCA Decision is at annex 5.
- 1.7 A copy of European Commission Recommendation 2008/295/EC of 7 April 2008 on authorisation of mobile communication services on aircraft (MCA services) in the European Community (“the MCA Recommendation”) is at annex 6.
- 1.8 A copy of the draft Notice of Variation (NoV) to aircraft licences is at annex 7.
- 1.9 A draft of the Proposed Regulations is at annex 8.
- 1.10 Comments on the draft are invited by 5 p.m. on 29 August 2008. Subject to consideration of responses, we intend to bring the new regulations into force in October 2008.

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<sup>1</sup> Available at <http://www.ofcom.org.uk/consult/condocs/mca/mobilecomms.pdf>.

<sup>2</sup> Available at <http://www.ofcom.org.uk/consult/condocs/mca/statement/mca.pdf>.

<sup>3</sup> Available at <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2008:098:0019:0023:EN:PDF>.

<sup>4</sup> Available at [http://www.ofcom.org.uk/radiocomms/ifi/tech/interface\\_req/draft\\_ir/draftir2070.pdf](http://www.ofcom.org.uk/radiocomms/ifi/tech/interface_req/draft_ir/draftir2070.pdf).

## Section 2

# Decision

- 2.1 In accordance with the requirements of section 122(4) and (5) of the Wireless Telegraphy Act 2006 (“the Wireless Telegraphy Act”), this document gives notice of our intention to make the Proposed Regulations.
- 2.2 We are responsible for authorising civil use of the radio spectrum and achieve this by granting wireless telegraphy licences under the Wireless Telegraphy Act and by making regulations exempting users of particular equipment from the requirement to hold such a licence. Under section 8(1) of the Wireless Telegraphy 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. Under section 8(4) of the Wireless Telegraphy Act, we must make regulations to exempt equipment if its installation or use is unlikely to cause undue interference.

## Background

- 2.3 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 passengers may connect.
- 2.4 The NCU is used to prevent the mobile stations within the cabin from accessing terrestrial networks and ensure that the mobile stations do not transmit any signal without being controlled by the onboard GSM system. The NCU achieves this by raising the radio-frequency noise floor within the mobile frequency bands to a level that blocks the signal from terrestrial networks. As the mobile terminal cannot receive a terrestrial control channel, it will not be able to register. As a consequence, it will remain in an idle state and not transmit. When the mobile receives an MCA control channel, which is transmitted at a higher level than the NCU signal, it will come out of its idle state.
- 2.5 We published a discussion document on 10 April 2006 that set out the background and some of the issues to be considered in relation to the introduction of MCA systems.<sup>5</sup> We received a number of helpful comments and held a seminar with stakeholders on 9 June 2006 where many of the key issues of spectrum and electronic communications service (ECS) authorisations were discussed.<sup>6</sup> The responses to the discussion document were summarised in a document published on 31 October 2006,<sup>7</sup> and non-confidential responses were published on our website.<sup>8</sup>
- 2.6 The Electronic Communications Committee (ECC) of the European Conference of Postal and Telecommunications Administrations (CEPT) adopted Decision ECC/DEC/(06)07 (“the ECC Decision”) in December 2006.<sup>9</sup> The ECC Decision covers the free circulation and harmonised use of MCA systems and sets out the technical limits that must be observed to ensure that MCA systems do not cause harmful interference. These limits are based on ECC Report 93,<sup>10</sup> which addresses

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<sup>5</sup> Available at <http://www.ofcom.org.uk/research/telecoms/reports/aircraft/summary/>.

<sup>6</sup> Available at <http://www.ofcom.org.uk/research/telecoms/reports/aircraft/slides.pdf>.

<sup>7</sup> Available at <http://www.ofcom.org.uk/research/telecoms/reports/aircraft/stakeholderviews/>.

<sup>8</sup> Available at <http://www.ofcom.org.uk/research/telecoms/reports/aircraft/responses/>.

<sup>9</sup> Available at <http://www.ero.dk/documentation/docs/doccategory.asp?catid=1&catname=ECC/ERC/ECTRA%20Decisions>.

<sup>10</sup> Available at <http://www.ero.dk/documentation/docs/doccategory.asp?catid=4&catname=ECC/ERC/ECTRA%20Reports>.

the compatibility between equipment for MCA on board aircraft and terrestrial networks.

- 2.7 The European Telecommunications Standards Institute (ETSI) has taken the ECC Decision and developed a harmonised standard (ETSI EN 302 480) for equipment to deliver MCA. This standard went to public enquiry on 18 July 2007, concluding on 16 November 2007.<sup>11</sup> The final vote on the harmonised standard took place on 6 May 2008. The harmonised standard has now been approved and adopted and will be notified in the Official Journal of the European Union in August 2008. Work continues within ETSI on the complimentary draft technical standard ETSI TS 102 576.<sup>12</sup>
- 2.8 The MCA Decision requires Member States to make the 1800 MHz frequency band available for MCA systems on a non-protected, non-interference basis according to specified technical conditions. The MCA Decision is based on the ECC Decision and also refers to CEPT Report 016<sup>13</sup> and the harmonised standard developed by ETSI.
- 2.9 The MCA Recommendation addresses the coordination and mutual recognition of national authorisations granted for MCA services. Conditions for authorisations include compliance with the technical conditions referred to in the MCA Decision and the harmonised standard developed by ETSI.
- 2.10 We consulted on the proposal to allow mobile-phone handsets to be used on board aircraft in our consultation "Mobile communications on board aircraft: consultation on the introduction of mobile services on aircraft"<sup>14</sup> published on 18 October 2007. The consultation closed on 30 November 2007.
- 2.11 On 26 March 2008 we published a Statement "Mobile communications on board aircraft (MCA) Ofcom statement on authorising MCA services"<sup>15</sup> outlining our proposals for the introduction of MCA services in the UK.
- 2.12 We are now consulting on the Proposed Regulations to enable mobile terminals to connect to an MCA service on a licence exempt basis. The consultation will close at 5 p.m. on 29 August 2008. The one month and a day consultation process is in line with our consultation guidelines<sup>16</sup> as the issue has already been the subject of a consultation.
- 2.13 Following this consultation we will publish a final regulatory statement and make the Regulations. We expect the regulations to come into force in October 2008.

## **Aircraft safety, security and passenger behaviour**

- 2.14 In our previous consultation we received a number of responses from stakeholders regarding aircraft safety, security and passenger behaviour. Our response to these concerns was outlined in our statement published on 26 March 2008. This consultation does not reopen any of these issues. As previously explained, we are only able to address those issues that fall within our remit - i.e. regulation of spectrum and ECS.

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<sup>11</sup> Available at [http://webapp.etsi.org/workProgram/Report\\_Schedule.asp?WKI\\_ID=25058](http://webapp.etsi.org/workProgram/Report_Schedule.asp?WKI_ID=25058).

<sup>12</sup> Available at <http://www.etsi.org/WebSite/Technologies/gsmonaaircraft.aspx>.

<sup>13</sup> Available at

[http://ec.europa.eu/information\\_society/policy/radio\\_spectrum/docs/ref\\_docs/rsc19\\_public\\_docs/rscom07\\_08\\_fin\\_rep\\_%20mca.pdf](http://ec.europa.eu/information_society/policy/radio_spectrum/docs/ref_docs/rsc19_public_docs/rscom07_08_fin_rep_%20mca.pdf).

<sup>14</sup> Available at <http://www.ofcom.org.uk/consult/condocs/mca/mobilecomms.pdf>

<sup>15</sup> Available at <http://www.ofcom.org.uk/consult/condocs/mca/statement/mca.pdf>.

<sup>16</sup> Available at [http://www.ofcom.org.uk/consult/consult\\_method/ofcom\\_consult\\_guide](http://www.ofcom.org.uk/consult/consult_method/ofcom_consult_guide)

- 2.15 We take all aircraft safety issues seriously and consider them to be of primary importance. However, safety issues fall outside our remit and will need to be addressed by the relevant authorities - the Civil Aviation Authority (CAA) in the UK, the European Aviation Safety Agency (EASA) and the International Civil Aviation Organisation (ICAO). No services could be deployed unless the relevant authorities are satisfied that safety is assured.
- 2.16 Concerns about peace and quiet on aircraft and the potential for mobile phone users to annoy other passengers is a matter for aircraft operators. The aircraft operators will need to decide how to balance the services they offer to their passengers with the impact that they have.

### **Implementing the new EU Framework**

- 2.17 As explained above, two instruments have been adopted at European level to establish a harmonised regulatory framework for enabling the use of mobile phones on aircraft in Europe (Mobile communications onboard aircraft or “MCA services”). These are the European Commission Decision of 7 April 2008 (the “MCA Decision”) and the European Commission Recommendation of 7 April 2008 (the “MCA Recommendation”).
- 2.18 The MCA Decision provides for the frequency bands and technical parameters to be used and complied with when MCA services are operated. The technical parameters are based on the ECC Decision and the CEPT Report 016<sup>17</sup>. The MCA Decision also refers to the harmonised standard developed by ETSI.
- 2.19 The MCA Recommendation provides that Member States should take all necessary steps to be able to authorise provision of MCA services in aircraft registered within their jurisdiction. Member States should not authorise MCA services unless they satisfy the technical conditions set out in the MCA Decision. Member States are also to recognise authorisation granted to aircraft registered in other Member States or outside the Community in compliance with the technical parameters set in the MCA Decision.

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<sup>17</sup> CEPT's Report 016 - Report from CEPT to the European Commission in response to the Mandate on Mobile Communication services on board Aircraft (MCA) 12.3.2007 - [http://ec.europa.eu/information\\_society/policy/radio\\_spectrum/docs/ref\\_docs/rsc19\\_public\\_docs/rscom07\\_08\\_fin\\_rep\\_%20mca.pdf](http://ec.europa.eu/information_society/policy/radio_spectrum/docs/ref_docs/rsc19_public_docs/rscom07_08_fin_rep_%20mca.pdf)

## Section 3

# General effect of the Wireless Telegraphy (Mobile Communication Services on Aircraft) (Exemption) Regulations 2008

## The Legislative Framework

3.1 We can exempt the establishment, installation and use of wireless telegraphy equipment by making Regulations under section 8(3) of the Wireless Telegraphy Act 2006. We propose to implement the changes proposed in the recent consultation and summarised in this document by making the Wireless Telegraphy (Mobile Communication Services on Aircraft) (Exemption) Regulations 2008 (the “Proposed Regulations”). The Proposed Regulations are included in Annex 8 of this document.

## Regulations to Exempt Mobile Terminals

3.2 The Proposed Regulations we are now consulting on will exempt the use of mobile terminals on-board aircraft pursuant to section 8(4) of the Wireless Telegraphy Act. The Proposed Regulations mirror the technical parameters and standards set in the MCA Decision. They set the terms, provisions and limitations to be complied with for the on-board MCA system. The Proposed Regulations provide that the exemption shall apply if:

- “Wireless telegraphy apparatus” (mobile terminals used by passengers) comply with the ETSI standards set in the MCA Decision or equivalent specification.
- The wireless telegraphy apparatus may only operate in the frequencies 1710 - 1785 MHz and 1805 - 1880 MHz (“the 1800 MHz band”) and must only be used for MCA services.
- The wireless telegraphy apparatus may only be used at a minimum height above ground of 3000 metres.
- The wireless telegraphy apparatus shall be used on a non-interference and non-protected basis.
- The wireless telegraphy apparatus may only be used where the transmission power of all wireless telegraphy apparatus is limited by the aircraft BTS to a nominal value of 0 dBm at all stages of communication, including initial access.
- The wireless telegraphy apparatus may only be used where the e.i.r.p. outside the aircraft emanating from the wireless telegraphy apparatus transmitting at 0 dBm does not, at a height above ground specified in Column 1 of Table 2 of the Schedule, exceed the value of the maximum e.i.r.p. specified in Column 2 of that Table in relation to that height above ground.
- The wireless telegraphy apparatus must connect to a relevant network which complies with the following conditions for the purpose of providing MCA services



(a) the NCU must prevent the receiving wireless telegraphy apparatus within the frequency bands listed in Column 1 of Table 1 of the Schedule, from registering with the systems on the ground listed in Column 2 of that Table;

(b) the total e.i.r.p. outside the aircraft emanating from the NCU or aircraft BTS must not, at a height above ground specified in Column 1 of Table 3 of the Schedule, and at the frequency bands specified in Columns 2(a) to 2(d) of that Table, exceed the power level specified in those Columns of that Table in relation to that height above ground.

### **Territorial Extent of the Proposed Regulations**

- 3.3 The MCA Recommendation provides that Member States shall authorise provision of MCA services in aircraft registered within their jurisdiction. No additional authorisation should be required for operation of MCA services in aircraft registered in other Member States and outside the Community in compliance with conditions set in the MCA Decision.
- 3.4 We are in charge of authorising the use of base station and NCU for aircraft registered in the United Kingdom. As explained above this will be achieved by variation of the wireless telegraphy licence already issued by the CAA on behalf of ourselves to UK registered aircraft. This authorisation will follow the requirement set in the MCA Decision, so that following the MCA Recommendation, it should be recognised by other Member States when UK registered aircrafts operate MCA services above their territory.
- 3.5 As set out above, it is an offence to establish, install or use wireless telegraphy stations without holding a licence granted by Ofcom, unless the use of such equipment is exempted. Section 119 of the Wireless Telegraphy Act provides that this requirement applies to all stations and apparatus in or over, or for the time being in or over, the UK or UK territorial sea. This also applies to UK registered aircraft that operate outside the UK or UK territorial sea.
- 3.6 The Proposed Regulations will therefore apply to any terminals used on-board aircraft being over the UK or UK territorial sea (whether UK registered or not) that comply with the terms, provisions and limitations set out in the Proposed Regulations. They will also cover the use of terminals in UK registered aircraft when UK registered aircraft operate outside the UK or UK territorial sea.
- 3.7 The MCA Decision shall be implemented within six months of its entry into force.

### **Licensing of Base station and NCU**

- 3.8 As explained in our Statement of 26 March 2008, the base station and NCU on-board aircraft will **not** be exempted. The Proposed Regulations we are now consulting on only cover the use of mobile terminals on board. They do not relate to the use of the base station and NCU.
- 3.9 Both, equipment (base station and NCU) will be subject to the licensing requirement of section 8(1) of the Wireless Telegraphy Act. As explained in our statement of 26 March 2008, the base station and NCU will need to be authorised via a variation of the existing aircraft wireless telegraphy licence. Aircraft operator will therefore need to apply to ourselves for a variation of their aircraft licences.
- 3.10 We have already consulted on the draft Notice of Variation (NoV) in our consultation of 18 October 2007. The NoV is therefore not subject to this present consultation. We

have added a sample of the NoV in annex 7 of this document for information purpose only.

3.11 Following variation, the aircraft wireless telegraphy licence will contain conditions that will incorporate:

- The requirements set in paragraph 1 (Table 1) in annex of the MCA Decision ('Frequency Bands and Systems Allowed for MCA Services'). The licence will describe the frequency bands and systems allowed for MCA services as well as the ETSI standards to be complied with.
- The requirement set in paragraph 2 (Table 2) in annex of the MCA Decision ('Prevention of Connection of Mobile Terminals to Grounds Networks').
- The requirement set in paragraph 3 (Table 3 and Table 4) in annex of the MCA Decision ('Technical Parameters'). The licence will refer to the total maximum e.i.r.p. outside the aircraft from the base station and NCU. It will specify the maximum e.i.r.p. outside the aircraft from the mobile handsets transmitting at 0 dBm and the operational requirements set in paragraph 3.1(c) in annex of the MCA Decision.

## 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 5 p.m. on 29 August 2008**.
- A1.2 Ofcom strongly prefers to receive responses using the online web form at <http://www.ofcom.org.uk/consult/condocs/mca08/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 [paul.chapman@ofcom.org.uk](mailto:paul.chapman@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.
- Paul Chapman  
3<sup>rd</sup> Floor  
Spectrum Policy Group  
Riverside House  
2A Southwark Bridge Road  
London SE1 9HA
- Fax: 020 7981 3921
- A1.5 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.
- A1.6 It would be of help if you can explain why you hold your views and how Ofcom's proposals would impact on you.

## Further information

- A1.7 If you want to discuss the issues and questions raised in this consultation, or need advice on the appropriate form of response, please contact Paul Chapman on 020 7981 3069.

## Confidentiality

- A1.8 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](http://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.

- A1.9 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.
- A1.10 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

- A1.11 Following the end of the consultation period, Ofcom intends to publish a statement in September 2008.
- A1.12 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](http://www.ofcom.org.uk/static/subscribe/select_list.htm)

### Ofcom's consultation processes

- A1.13 Ofcom seeks to ensure that responding to a consultation is easy as possible. For more information please see our consultation principles in Annex 2.
- A1.14 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](mailto: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.
- A1.15 If you would like to discuss these issues or Ofcom's consultation processes more generally you can alternatively contact Vicki Nash, Director Scotland, who is Ofcom's consultation champion:

Vicki Nash  
Ofcom  
Sutherland House  
149 St. Vincent Street  
Glasgow G2 5NW

Tel: 0141 229 7401  
Fax: 0141 229 7433

Email [vicki.nash@ofcom.org.uk](mailto:vicki.nash@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 version for smaller organisations or individuals who would otherwise not be able to spare the time to share their views.

A2.5 We will normally allow ten weeks for responses to consultations on issues of general interest.

A2.6 There will be a person within Ofcom who will be in charge of making sure we follow our own guidelines and reach out to the largest number of people and organizations interested in the outcome of our decisions. This individual (who we call the 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. This may be because a particular issue is urgent. If we need to reduce the amount of time we have set aside for a consultation, we will let those concerned know beforehand that this is a 'red flag consultation' which needs their urgent attention.

### After the consultation

A2.8 We will look at each response carefully and with an open mind. 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](http://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/](http://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	<input type="checkbox"/>	Name/contact details/job title	<input type="checkbox"/>
Whole response	<input type="checkbox"/>	Organisation	<input type="checkbox"/>
Part of the response	<input type="checkbox"/>	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

# Impact Assessment

## Introduction

- A4.1 In accordance with Government practice, where a statutory regulation is proposed, a Regulatory Impact Assessment (“RIA”) must be undertaken.
- A4.2 The analysis presented here, represents an RIA as defined by section 7 of the Communications Act 2003 (“the Communications Act”) for the Wireless Telegraphy (Mobile Communication Services on Aircraft) (Exemption) Regulations 2008 (the “Proposed Regulations”).
- A4.3 RIAs provide a valuable way of assessing different options for regulation and showing why the preferred option was chosen. They form part of best practice policy-making and are commonly used by other regulators. This is reflected in section 7 of the Communications Act, which means that we will generally carry out impact assessments where proposals would be likely to have a significant effect on businesses or the general public, or when there is a major change in our activities. However, as a matter of policy we are committed to carrying out and publishing impact assessments in relation to the great majority of our policy decisions. In accordance with section 7 of the Communications Act, in producing this RIA, we have had regard to such general guidance as we consider appropriate including related Cabinet Office guidance. For further information about our approach to impact assessments, see the guidelines, Better policy-making: Ofcom’s approach to impact assessment, which are on our website: [http://www.ofcom.org.uk/consult/policy\\_making/guidelines.pdf](http://www.ofcom.org.uk/consult/policy_making/guidelines.pdf).

## Background

- A4.4 In the UK, we are responsible for authorising the civil use of the radio spectrum and achieve this by granting wireless telegraphy licences under the Wireless Telegraphy Act 2006 (“the Wireless Telegraphy Act”) and by making Regulations exempting users of particular equipment from the requirement to hold such a licence. Under section 8(1) of the Wireless Telegraphy Act, it is an offence to install or use equipment to transmit without holding a licence granted by us, unless the use of such equipment is exempted. Section 8(3) enables Ofcom to make regulations exempting equipment from the requirement to hold a licence subject to specified terms, provisions and limitations and under Section 8(4) of the Wireless Telegraphy Act we must make regulations to exempt equipment if it is unlikely to cause undue interference.

## The citizen and/or consumer interest

- A4.5 In light of the progress made within the relevant European forums and the MCA Decision and the MCA Recommendation, we are proposing to authorise the use of spectrum on board aircraft in flight so that passengers can use their mobile phones to make and receive calls while flying. The business opportunity seen by proponents of MCA for airlines, specialist operators and the mobile phone networks is based on the expectation that customers will find the service sufficiently valuable to use and pay for it.



- A4.6 Some consumers have suggested that the use of mobiles during flight will irritate other passengers and compromise their comfort and welfare. They argue that aircraft in flight are one of the few places where mobile phones are not permitted and that this immunity should be preserved. Some of their concerns stem from the prospect of a long journey sitting next to someone speaking loudly on their mobile.
- A4.7 However there are many ways in which some passengers can annoy others, and in these cases it is a matter for airlines and aircraft operators how to balance the services they offer to their passengers with the impact that they have. An example is the serving of alcohol on board, which can lead to disruptive behaviour. Airlines have developed procedures for dealing with negative consequences of alcohol; but many have decided that, with these safeguards, alcohol remains a valued part of their service. It is likely that similar procedures will be developed to deal with any negative impact of mobile phone use. The CAA in the UK and similar organisations in other countries assess and certify the effectiveness and suitability of onboard procedures like these.
- A4.8 The installation of MCA radio equipment is entirely under the control of the airline. Airlines therefore have the choice of whether to offer MCA services or not. They will be better placed than any regulator to understand and reflect the preferences and requirements of their customers. The air transport market is generally highly competitive and in the case of significant public dislike of MCA the airlines are likely to be able to respond flexibly to their customers' preferences.
- A4.9 The tariffs for these in-flight MCA services might be higher than those charged for terrestrial services due to the differing costs of MCA compared to terrestrial networks. The pricing of these services will be subject to the relevant regulations, under which we have the power to investigate and address cases of consumer detriment. However these services are in their infancy and it would be premature to predict serious problems at this stage.

### **Ofcom's policy objective**

- A4.10 Under the Communications Act 2003 we must have regard to the desirability of encouraging investment and innovation in relevant markets as well as to further the interests of citizens and consumers. MCA systems represent a potentially valuable innovation and the development of a new market for mobile communications. Establishing a regulatory framework in which MCA systems can be deployed is in line with the development of a co-ordinated approach to MCA across Europe which follows the adoption of the MCA Decision and the MCA Recommendation. This allows for the mutual recognition of Member States' authorisations for MCA on the basis of common technical and authorisation requirements.

### **Options considered**

- A4.11 There are two issues whose impact needs to be assessed for us to authorise the use of mobile terminals when connecting to an MCA service:
- The authorisation of MCA services based on the EU common approach; and
  - Whether the authorisation of terminals connecting to MCA radio equipment should be the same as when connecting to terrestrial networks (i.e. licence exempt).

## **Authorisation of MCA and the EU common approach**

- A4.12 Mobile phone use on aircraft has always been prohibited because of concerns about potential interference to safety-critical aircraft systems. Similar rules about other electronic devices (e.g. laptops and games consoles) have been relaxed in recent years and these are now generally permitted except during the take-off and landing phases of flight.
- A4.13 At the EU level, the technical work has now been done which allows a similar relaxation of the rule against using mobile phones on board. The consensus among technical experts in Europe and elsewhere is that technical standards can be defined to allow for MCA services.
- A4.14 European bodies have set out the common technical requirements for MCA and have developed a harmonised standard to reduce the risk of possible interference to terrestrial networks and are currently working on a complimentary technical standard. We believe that these standards will be adequate to reduce the risk of harmful interference. However MCA systems are a new and innovative development and they are untested in a “live” environment. There is therefore the possibility that they may generate interference, either singularly or cumulatively, which may harm terrestrial radio systems. We expect the necessary precautions to be taken to ensure this situation does not arise, so that the terrestrial networks do not suffer interference.
- A4.15 Proponents of MCA argue that such systems offer additional value to passengers. Their business cases rest on the assumption that passengers will pay for the service. There are likely to be significant costs for installing MCA systems, unlike, for example, mobile services on trains or buses which use the existing terrestrial networks. If MCA services are not valued by consumers, they will not be used and few installations will be made. We can therefore rely on the market to determine the degree to which MCA services are rolled out.
- A4.16 EU Member States and the European Commission have now defined the technical and authorisation parameters which will allow MCA to be launched across Europe. The outcome of this initiative is a mandatory requirement for Member States to make 1800 MHz spectrum available for MCA. This requirement can not be disregarded and Member States are expected to authorise MCA in the near future. Further, 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. At the same time UK consumers’ ability to choose airlines which offer the services they want would be reduced.
- A4.17 In light of these factors, and in particular the MCA Decision and MCA Recommendation, we believe that the authorisation of mobile terminals on board aircraft should be based on the common EU regulatory framework.

## **Terminal licence exemption when connecting to a MCA service**

- A4.18 Mobile terminals are already licence exempt when connected to terrestrial networks. The MCA service effectively replicates the operation of a terrestrial base station but on an aircraft. Users could use their existing terminal without the need to configure it in order to access the MCA service.
- A4.19 As there is no requirement on mobile terminal users to hold a WT Act licence when using it terrestrially, then to require a licence when using the same equipment on

board an aircraft would be disproportionate and would likely prove a barrier to the uptake of the service.

- A4.20 In the UK all radio equipment must be either licensed or specifically exempted from use under the Wireless Telegraphy Act. In support of our objectives of deregulation and administrative simplification we exempt radio equipment wherever it is sensible to do so. In the case of mobile terminal equipment, such as mobile telephones, connected to the major service provider networks it would be impractical and unfeasible to issue individual licences and we therefore need to exempt this equipment. The effect will be that provided the equipment meets the relevant technical and operational criteria and standards, a licence will not be required in order to use it. The exemption is therefore achieved by reference to the performance specification of the mobile equipment used by the end-users on the licensed specified network.
- A4.21 For these reasons it would be more effective and straightforward for terminals connecting to a MCA service to follow the same licensing regime as when connecting to terrestrial systems.

### **Conclusion**

- A4.22 As explained in our Statement of 26 March 2008, we consider that the pico-cell base station and NCU should be licensed rather than licence-exempt and that the authorisation should be granted to UK registered aircraft via a variation (NoV) of the existing aircraft licence.
- A4.23 We consider that the mobile terminal should be licence exempt and treated the same way as when connecting to a terrestrial network.

## Annex 5

## European Commission Decision

10.4.2008

EN

Official Journal of the European Union

L 98/19

## COMMISSION DECISION

of 7 April 2008

## on harmonised conditions of spectrum use for the operation of mobile communication services on aircraft (MCA services) in the Community

(notified under document number C(2008) 1256)

(Text with EEA relevance)

(2008/294/EC)

THE COMMISSION OF THE EUROPEAN COMMUNITIES,

having regard to the Treaty establishing the European Community,

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 (the Radio Spectrum Decision) <sup>(1)</sup>, and in particular Article 4(3) thereof,

Whereas:

(1) The i2010 — European Information Society strategic framework <sup>(2)</sup> — promotes an open and competitive digital economy in the European Union and emphasises ICT as a driver of inclusion and quality of life. Development of additional means of communicating could be beneficial for work productivity and for growth in the mobile telephony market.

(2) Airborne connectivity applications are, by nature, pan-European as they will be used mostly for cross-border flights within the Community and beyond. A coordinated approach to regulate mobile communication services on aircraft (MCA services) will support the objectives of the Single Market.

(3) Harmonisation of the rules on the use of radio spectrum across the Community will facilitate timely deployment and uptake of MCA services within the Community.

(4) Commercial operation of MCA services is currently considered only for GSM systems operating in the 1 710-1 785 MHz band for uplink (terminal transmit and base station receive) and the 1 805-1 880 MHz band for downlink (base station transmit and terminal receive), in accordance with ETSI standards EN 301 502 and EN 301 511. However, in the future it may be extended to other terrestrial public mobile communication systems, operating in accordance with other standards and in other frequency bands.

(5) Pursuant to Article 4(2) of Decision No 676/2002/EC, the Commission has given a mandate <sup>(3)</sup> to the European Conference of Postal and Telecommunications Administrations (hereinafter the CEPT) to undertake all activities required to assess specific issues concerning technical compatibility between the operation of airborne GSM 1800 systems and a number of radio services potentially affected. This Decision is based on the technical studies undertaken by the CEPT under the EC mandate, as presented in CEPT Report 016 <sup>(4)</sup>.

(6) The MCA system considered in the CEPT report consists of a network control unit (NCU) and an aircraft base transceiver station (aircraft BTS). The system is designed to ensure that signals transmitted by ground-based mobile systems are not detectable within the aircraft cabin and that the user terminals on the aircraft only transmit at a minimum level. The technical parameters for the NCU and aircraft BTS were derived from theoretical models.

(7) Spectrum use by terrestrial mobile electronic communication networks is outside the scope of this Decision. They will be addressed, inter alia, by a Commission Decision on the harmonisation of the 900 MHz and 1 800 MHz frequency bands for terrestrial systems capable of providing pan-European electronic communication services.

(8) Authorisation terms and conditions for MCA services are also outside the scope of this Decision. Coordination of national authorisation conditions for MCA services is addressed by Commission Recommendation 2008/295/EC <sup>(5)</sup> pursuant to 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 (the Framework Directive) <sup>(6)</sup>.

<sup>(1)</sup> Mandate to the CEPT on mobile communication services on board aircraft, 12.10.2006.  
<sup>(2)</sup> Report from CEPT to the European Commission in response to the EC Mandate on mobile communication services on board aircraft (MCA), 30.3.2007.  
<sup>(3)</sup> See page 24 of this Official Journal.  
<sup>(4)</sup> OJ L 108, 24.4.2002, p. 33. Directive as amended by Regulation (EC) No 717/2007 (OJ L 171, 29.6.2007, p. 32).

<sup>(1)</sup> OJ L 108, 24.4.2002, p. 1.<sup>(2)</sup> COM(2005) 229 final, 1.6.2005.<sup>(3)</sup> Mandate to the CEPT on mobile communication services on board aircraft, 12.10.2006.<sup>(4)</sup> Report from CEPT to the European Commission in response to the EC Mandate on mobile communication services on board aircraft (MCA), 30.3.2007.<sup>(5)</sup> See page 24 of this Official Journal.<sup>(6)</sup> OJ L 108, 24.4.2002, p. 33. Directive as amended by Regulation (EC) No 717/2007 (OJ L 171, 29.6.2007, p. 32).

- (9) Equipment for MCA services covered by this Decision falls within the scope of Directive 1999/5/EC of the European Parliament and of the Council of 9 March 1999 on radio equipment and telecommunications terminal equipment and the mutual recognition of their conformity<sup>(1)</sup>. Presumption of conformity with the essential requirements of Directive 1999/5/EC for equipment used for MCA services in the European Union may be demonstrated by compliance with ETSI Harmonised Standard EN 302 480 or by using the other conformity assessment procedures set out in Directive 1999/5/EC.
- (10) Issues relating to air safety are of paramount importance and no provision in this Decision should be contrary to maintaining optimum air safety conditions.
- (11) MCA services may be provided only on condition that they fulfil air safety requirements via appropriate airworthiness certification and other relevant aeronautical provisions, together with electronic communication requirements. Airworthiness certificates valid for the whole Community are issued by the European Aviation Safety Agency (EASA) pursuant to Commission Regulation (EC) No 1702/2003 of 24 September 2003 laying down implementing rules for the airworthiness and environmental certification of aircraft and related products, parts and appliances, as well as for the certification of design and production organisations<sup>(2)</sup>.
- (12) This Decision does not address spectrum issues relating to the communication links between the aircraft, the satellite space station and the ground which are also required to provide MCA services.
- (13) For the purpose of ensuring that the conditions specified in this Decision are still relevant and given the rapid changes in the radio spectrum environment, national administrations ought to monitor, where possible, use of the radio spectrum by equipment for MCA services, in order to keep this Decision under active review. Such review should take into account technological progress and verify that the initial assumptions concerning operation of MCA services are still relevant.
- (14) The measures provided for in this Decision are in accordance with the opinion of the Radio Spectrum Committee,

<sup>(1)</sup> OJ L 91, 7.4.1999, p. 10. Directive as amended by Regulation (EC) No 1882/2003 (OJ L 284, 31.10.2003, p. 1).

<sup>(2)</sup> OJ L 243, 27.9.2003, p. 6. Regulation as last amended by Regulation (EC) No 287/2008 (OJ L 87, 29.3.2008, p. 3).

HAS ADOPTED THIS DECISION:

*Article 1*

The purpose of this Decision is to harmonise the technical conditions for the availability and efficient use of radio spectrum for mobile communication services on aircraft in the Community.

This Decision shall apply without prejudice to any other relevant Community provisions, in particular Regulation (EC) No 1702/2003 and Recommendation 2008/295/EC.

*Article 2*

For the purposes of this Decision:

1. 'mobile communication services on aircraft (MCA services)' means electronic communication services, as defined in Article 2(c) of Directive 2002/21/EC, provided by an undertaking to enable airline passengers to use public communication networks during flight without establishing direct connections with terrestrial mobile networks;
2. '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;
3. 'aircraft base transceiver station (aircraft BTS)' means one or more mobile communication stations located in the aircraft supporting the frequency bands and systems specified in Table 1 in the Annex;
4. 'network control unit (NCU)' means equipment to be located in the aircraft that ensures that signals transmitted by ground-based mobile electronic communication systems listed in Table 2 in the Annex are not detectable within the cabin by raising the noise floor inside the cabin in mobile communication receive bands.

*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*

Member States shall keep use of spectrum by MCA services under scrutiny, in particular with regard to actual or potential harmful interference and to the continued relevance of all the

conditions specified in Article 3, and shall report their findings to the Commission to allow a timely review of this Decision if necessary.

*Article 6*

This Decision is addressed to the Member States.

Done at Brussels, 7 April 2008.

*For the Commission*

Viviane REDING

*Member of the Commission*

## ANNEX

## 1. FREQUENCY BANDS AND SYSTEMS ALLOWED FOR MCA SERVICES

Table 1

Type	Frequency	System
GSM 1800	1 710-1 785 MHz and 1 805-1 880 MHz (the 1 800 MHz band)	Complying with the GSM Standards published by ETSI, in particular EN 301 502, EN 301 511 and EN 302 480, 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
921-960	GSM, WCDMA
1 805-1 880	GSM, WCDMA
2 110-2 170	WCDMA

## 3. TECHNICAL PARAMETERS

## 3.1. GSM 1800 MCA systems

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

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

Table 3

Height above ground (m)	Maximum e.i.r.p. density produced by NCU/aircraft BTS outside the aircraft			
	460-470 MHz	921-960 MHz	1 805-1 880 MHz	2 110-2 170 MHz
	dBm/1,25 MHz	dBm/200 kHz	dBm/200 kHz	dBm/3,84 MHz
3 000	-17,0	-19,0	-13,0	1,0
4 000	-14,5	-16,5	-10,5	3,5
5 000	-12,6	-14,5	-8,5	5,4
6 000	-11,0	-12,9	-6,9	7,0
7 000	-9,6	-11,6	-5,6	8,3
8 000	-8,5	-10,5	-4,4	9,5

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

The e.i.r.p., outside the aircraft, from the GSM mobile terminal transmitting at 0 dBm must not exceed:

Table 4

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

(c) *Operational requirements*

- I. The minimum height above ground for any transmission from a GSM 1800 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 at all stages of communication, including initial access.



## Annex 6

## European Commission Recommendation

L 98/24

EN

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10.4.2008

## RECOMMENDATIONS

## COMMISSION

## COMMISSION RECOMMENDATION

of 7 April 2008

on authorisation of mobile communication services on aircraft (MCA services) in the European Community

(notified under document number C(2008) 1257)

(Text with EEA relevance)

(2008/295/EC)

THE COMMISSION OF THE EUROPEAN COMMUNITIES,

Having regard to the Treaty establishing the European Community,

Having regard to 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) <sup>(1)</sup>, and in particular Article 19(1) thereof,

Whereas:

(1) The EU's information society policy and the i2010 initiative stress the benefits of ready access to information and communication resources in all areas of daily life. A coordinated approach to regulate mobile communication services on aircraft (MCA services) would help to secure these benefits and facilitate cross-border electronic communications services across the Community.

(2) When authorising MCA services, Member States must comply with the Framework Directive and with Directive 2002/20/EC of the European Parliament and of the Council of 7 March 2002 on the authorisation of electronic communications networks and services (Authorisation Directive) <sup>(2)</sup>.

<sup>(1)</sup> OJ L 108, 24.4.2002, p. 33. Directive as amended by Regulation (EC) No 717/2007 (OJ L 171, 29.6.2007, p. 32).

<sup>(2)</sup> OJ L 108, 24.4.2002, p. 21.

(3) Pursuant to the Framework Directive, national regulatory authorities in the Member States should contribute to the development of the internal market by, *inter alia*, removing remaining obstacles to the provision of electronic communications networks, associated facilities and services and electronic communications services at European level and by encouraging the establishment and development of trans-European networks and the interoperability of pan-European services, and end-to-end connectivity.

(4) Pursuant to the Authorisation Directive, the least onerous authorisation system possible should be used to allow the provision of electronic communications networks and services in order to stimulate the development of new electronic communications services and pan-European communication networks and services and to allow service providers and consumers to benefit from the economies of scale of the single market. Those aims can generally best be achieved by general authorisation of all electronic communications networks and services.

(5) The technical conditions necessary to reduce the risk of harmful interference with terrestrial mobile networks by MCA operation are dealt with separately in Commission Decision 2008/294/EC <sup>(3)</sup>.

(6) The technical basis for Decision 2008/294/EC is Report 016 of the European Conference of Postal and Telecommunications Administrations (CEPT), which was written in response to the EC mandate given to the CEPT on MCA of 12 October 2006.

<sup>(3)</sup> See page 19 of this Official Journal.

- (7) ETSI Harmonised Standard EN 302 480 provides for presumption of conformity with the essential requirements of Directive 1999/5/EC of the European Parliament and of the Council of 9 March 1999 on radio equipment and telecommunications terminal equipment and the mutual recognition of their conformity<sup>(1)</sup> for equipment used for MCA services in the European Union.
- (8) Issues relating to air safety are of paramount importance and MCA services may be provided only on condition that they have fulfilled air safety requirements via appropriate airworthiness certification and other relevant aeronautical agreements, together with electronic communications requirements. Airworthiness certificates valid for the whole European Union are issued by the European Aviation Safety Agency (EASA).
- (9) Provided the technical conditions specified in Decision 2008/294/EC and in Harmonised Standard EN 302 480 or equivalent standards and relevant airworthiness certificates fulfil the relevant requirements, the risk of harmful interference will be negligible and therefore general authorisations should be considered for MCA services.
- (10) Responsibility for authorisation of MCA services should lie with the country of registration of the aircraft, in accordance with that country's authorisation system.
- (11) The availability and sharing of sufficient information should help to resolve possible cross-border interference issues caused by MCA services.
- (12) Member States are to provide some of the information required to the BRO Frequency Information System (ERIS) pursuant to Commission Decision 2007/344/EC of 16 May 2007 on harmonised availability of information regarding spectrum use within the Community<sup>(2)</sup>. Other relevant information may be obtained from operators of MCA services or from civil aviation administrations.
- (13) A dedicated register of relevant data for all MCA-bearing aircraft flying within the European Union, and also into and out of the European Union, could help to resolve interference by gathering all the information on a timely basis and in a common format. At first, and subject to periodic review, such a common register would be maintained by the relevant MCA operators and would be made available to the Commission and to the Member States.
- (14) The resolution of interference issues between Member States may also be helped by the provisions of the international ITU Radio Regulations treaty on notification and recording of frequency assignments and on reporting harmful interference.
- (15) The authorisation of MCA-bearing aircraft flying within the airspace of Member States but registered outside the European Union would be assisted by relevant information provided by industry in its dedicated MCA register and by the application of relevant provisions in the ITU Radio Regulations. A common approach on the mutual recognition of MCA authorisations with countries where non-EU aircraft is registered could be helpful.
- (16) Member States have already granted rights of use of frequencies to terrestrial mobile operators. Such authorisations do not cover MCA services and are generally limited to terrestrial mobile services.
- (17) For the purposes of this Recommendation, the aircraft cabin space is considered to be under the jurisdiction and control of the country of registration of the aircraft.
- (18) Use of MCA services may also have implications for public security. Appropriate measures may be taken nationally or pursuant to Regulation (EC) No 2320/2002 of the European Parliament and of the Council of 16 December 2002 establishing common rules in the field of civil aviation security<sup>(3)</sup> in order to ensure that mobile phones in aircraft are not used for illegal purposes.
- (19) The regulatory and technical elements of the common approach to authorisation of MCA services in the European Union should be kept under scrutiny to ensure that they remain satisfactory for the overall purpose of avoiding harmful interference, failing which appropriate remedial measures will be considered.
- (20) The measures provided for in this Recommendation are in accordance with the opinion of the Communications Committee.

<sup>(1)</sup> OJ L 91, 7.4.1999, p. 10. Directive as amended by Regulation (EC) No 1882/2003 (OJ L 284, 31.10.2003, p. 1).

<sup>(2)</sup> OJ L 129, 17.5.2007, p. 67.

<sup>(3)</sup> OJ L 355, 30.12.2002, p. 1. Regulation as amended by Regulation (EC) No 849/2004 (OJ L 158, 30.4.2004, p. 1; corrected by OJ L 229, 29.6.2004, p. 3).

## HEREBY RECOMMENDS:

1. This Recommendation aims to coordinate national authorisation conditions and procedures relating to use of the radio spectrum for mobile communication services on aircraft (MCA services) in order to facilitate their introduction in the Community and to avoid harmful interference caused by MCA services on cross-border flights.

Human factor issues relating to use of MCA services and satellite communications between aircraft and space stations are outside the scope of this Recommendation.

National authorisation conditions and rules referred to in this Recommendation will apply without prejudice to legal obligations concerning air safety and public security.

2. Mobile communication services on aircraft (MCA services) mean electronic communications services, as defined in Article 2(c) of the Framework Directive, provided by an undertaking to enable airline passengers to use public communication networks during flight without establishing direct connections with terrestrial mobile networks.

3. Not later than six months after adoption of this Recommendation, Member States should take all steps necessary to be able to authorise provision of MCA services in aircraft registered within their jurisdiction.

Member States should authorise MCA services in accordance with the principles set out in this Recommendation. No provision in this Recommendation should be contrary to maintaining optimum air safety conditions.

Member States should require no additional authorisation for operation of MCA services above their territory in aircraft registered in other Member States in compliance with the conditions agreed pursuant to point 4.

MCA services in aircraft registered outside the Community should also be exempted from authorisation in the Community, provided such services are in compliance with the conditions agreed pursuant to point 4 and registered in accordance with the relevant ITU rules.

4. Member States should not authorise MCA services unless they satisfy the technical conditions set out in Decision 2008/294/EC.

5. Member States should consider making provision of MCA services in aircraft registered within their jurisdiction subject to general authorisations.

Where use of spectrum for operation of MCA services is subject to individual rights, Member States should periodically reassess the need for such individual rights in the light of the experience acquired, with the objective of incorporating the conditions attached to such rights into a general authorisation.

In such cases, Member States should ensure that MCA services and terrestrial mobile electronic communications services in the same frequency bands are authorised on distinct bases.

6. Member States should inform the Commission and other Member States in a timely manner of the MCA services authorised to operate in aircraft registered within their jurisdiction and of the request for operation in their national airspace by MCA services in aircraft registered outside the European Union.

Where necessary, Member States should request operators of MCA services to supply data relevant for the purpose indicated in the previous paragraph.

7. Member States should cooperate actively, constructively and in a spirit of solidarity, using existing ITU procedures where appropriate, to manage any issues concerning harmful interference allegedly caused by operation of MCA services.

Member States should promptly bring issues concerning harmful interference allegedly caused by MCA services authorised in another Member State to the attention of the Member State responsible for authorisation of the MCA service concerned and should inform the Commission. Where appropriate, the Commission should inform the Communications Committee and the Radio Spectrum Committee of the above-mentioned issues in order to seek solutions to any difficulties.

Member States which have authorised MCA services which are suspected of interfering harmfully with services on the territory of another Member State should respond and promptly resolve any such interference.

8. Member States should keep use of spectrum by MCA services under scrutiny, in particular concerning actual or potential harmful interference, and should report their findings to the Commission to allow a timely review of this Recommendation if necessary.
9. This Recommendation is addressed to the Member States.

Done at Brussels, 7 April 2008.

*For the Commission*  
Viviane REDING  
*Member of the Commission*

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**Annex 7**

# Draft Notice of variation (NoV) to aircraft licence

## WIRELESS TELEGRAPHY ACT 2006

### NOTICE OF VARIATION OF AIRCRAFT RADIO LICENCE FOR THE PURPOSE OF THE INSTALLATION AND USE OF AN AIRCRAFT-BASE TRANSCEIVER STATION (PUBLIC CELLULAR BASE STATION) AND A NETWORK CONTROL UNIT 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]
Fee payment date	[month end renewal date]

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 (the “Licence”) as identified above, in accordance with Schedule 1 of the Act.

3 Terms and expressions defined in the Licence shall have the same meaning herein except where the context requires otherwise.

4 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 table is added after the last row in the table (headed “Radio Equipment”) in clause 2 “Licence Terms and Conditions” of the Licence:

	Frequency Range (MHz)	
	FROM	TO
<b><i>Aircraft-Base Transceiver Station (Public Cellular Base Station) (aircraft-BTS)</i></b>	<b>1710</b>	<b>1785</b>
	<b>1805</b>	<b>1880</b>
<b><i>Network Control Unit (NCU)</i></b>	<b>460</b>	<b>470</b>
	<b>921</b>	<b>960</b>
	<b>1805</b>	<b>1880</b>
	<b>2110</b>	<b>2170</b>
	<b>2500</b>	<b>2690</b>

5. 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. The terms below shall be read as an integral part of the Licence for this purpose:

- (a) The radio equipment shall comply with the conditions set in Annex of the Commission Decision of 7 April 2008 on harmonised conditions of spectrum use for the operation of mobile communication services on aircraft (MCA services) in the Community (2008/294/EC) (the “Decision”);
- (b) The radio equipment may only be used to provide “Mobile Communications services on Aircraft” (MCA services); the NCU may only be used for the facilitation of MCA services and not for any other purposes;
- (c) The radio equipment shall be operated on a ‘non-interference non-protected basis’;
- (d) The radio equipment shall only be operated when it forms part of a relevant network as defined in the Wireless Telegraphy (Mobile Communication Services on Aircraft) (Exemption) Regulations 2008;
- (e) The radio equipment shall comply with the requirements of ETSI EN 302 480 – Electromagnetic compatibility and Radio spectrum Matters (ERM); Harmonised EN for the GSM onboard aircraft system covering essential requirements of Article 3.2 of the R&TTE Directive or other equivalent specification and ETSI TS 102 576 – Electromagnetic compatibility and Radio spectrum Matters (ERM); Digital cellular telecommunications system (Phase 2+); Radio access network equipment specification; GSM onboard aircraft; Technical and operational requirements of the GSM onboard aircraft System;
- (f) The radio equipment shall comply with the UK Interface Requirement IR 2070;
- (g) During the period when operation of MCA services is authorised on the aircraft, user stations receiving within the frequency bands listed in Table 2 in Annex of the Decision must be prevented from registering with the ground’s systems listed in Table 2 in Annex of the Decision;
- (h) The total e.i.r.p outside the aircraft from the radio equipment must not exceed the limits set in Table 3 in Annex of the Decision;
- (i) The e.i.r.p outside the aircraft emanating from the user stations transmitting at 0 dBm must not exceed the limits set in Table 4 in Annex of the Decision;
- (j) The radio equipment may only be operated when there is a minimum separation distance of 3000 metres between the aircraft and the ground;
- (k) The aircraft-BTS, while in operation, must limit the transmit power of all user stations in the 1800 MHz band to a nominal value of 0 dBm at all stages of communications, including initial access;

(m) appropriate measures must be taken to ensure that user stations onboard aircraft are switched off when the radio equipment is not in operation and that user stations not controlled by the radio equipment remain switched off during all phases of the flight;

(n) Records on the operation of when the radio equipment is switched on and off must be kept for a minimum period of six months by the licensee and submitted to Ofcom at such intervals as Ofcom shall notify to the licensee;

(o) Operation of the radio equipment within the territory of administrations other than the UK are subject to the regulations and authorisations of those administrations;

(p) The licensee must ensure that the radio equipment is constructed and used only in accordance with the provisions specified in this Notice of Variation. Any proposal to amend any detail specified in this Notice of Variation or Licence must be agreed with Ofcom in advance and implemented only after the Licence has been varied or reissued accordingly.

(q) The licensee must ensure that the radio equipment is operated in compliance with the terms of the Licence and is used only by persons who have been authorised in writing by the licensee to do so and that such persons are made aware of, and of the requirement to comply with, the terms of the Licence.

7. Interpretation for the purposes of this NoV:

(a) GSM means Global System for Mobile Communications

(b) "Mobile Communications services on Aircraft (MCA services)" means electronic communication services as defined in Article 2 (c) of Directive 2002/21/EC provided by an undertaking to enable airline passengers to use public communication networks during flight without establishing direct connections with terrestrial mobile networks;

(c) "the 1800 MHz band" means the 1710-1785 MHz for uplink (terminal transmit, base station receive) and 1805-1880 MHz for downlink (base station transmit, terminal receive);

(d) "GSM system" means an electronic communications network, which complies with the GSM Standards, as published by ETSI, in particular EN 301 502 and EN 301 511;

(e) "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;

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

- (g) "Network Control Unit (NCU)" means an equipment to be located in the aircraft that ensures that signals transmitted by ground-based mobile electronic communication systems listed in Table 2 in Annex of the Decision are not detectable within the cabin by raising the noise floor inside the cabin in mobile communication receive bands.
- (h) "Aircraft Base Transceiver Station (aircraft-BTS)" means one or more mobile communication stations located in the aircraft supporting the frequency bands and systems complying with the GSM standards specified in Table 1 in Annex of the Decision.
- (i) "Public Cellular Base Station" means a base station intended to provide a public cellular electronic communications service using the Global System for Mobile Communications technology;
- (j) "the Radio Equipment", means the NCU and aircraft-BTS as defined in (g) and (h) above.
- (k) "User station" means any wireless telegraphy apparatus designed for mobile use which comply with the terms, provisions and limitations set out in the Wireless Telegraphy (Mobile Communication Services on Aircraft) (Exemption) Regulations 2008 and either complies with the appropriate IR 2070, or for equipment placed on the market before 8 April 2000, is typed approved in accordance with a recognised technical standard relating to the service licensed;
- (l) "Relevant Network" means an electronic communications network consisting exclusively of an aircraft BTS and NCU which are established and used under and in accordance with a wireless telegraphy licence which has been granted under section 8 of the Act;
- (m) UK Interface Requirement IR 2070 – Mobile Communication Services on Aircraft is a United Kingdom Radio Interface Requirement published by Ofcom in accordance with Article 4.1 of Directive 1995/5/EC of the European Parliament and of the Council on radio equipment and electronic communications service terminal equipment (RTTE) and the mutual recognition of their conformity;
- (n) all technical terms, unless the contrary intention appears, shall have the meaning assigned to them in the Radio Regulations.
- (o) Radio Regulations means the 2004 edition of the Radio Regulations made under Article 13 of the Constitution of the International Telecommunication Union;

14 This notice of variation shall take immediate effect.



**Annex 8**

# Draft Regulations

## STATUTORY INSTRUMENTS

2008 No. [XXX]

### ELECTRONIC COMMUNICATIONS

The Wireless Telegraphy (Mobile Communication Services on Aircraft) (Exemption) Regulations 2008

*Made*

[xxx] 2008

*Coming into force*

[xxx] 2008

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 (“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 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**

1. These Regulations may be cited as the Wireless Telegraphy (Mobile Communication Services on Aircraft) (Exemption) Regulations 2008 and shall come into force on [xxx].

#### **Interpretation**

2. In these Regulations—

“aircraft base transceiver station (aircraft BTS)” means one or more mobile communication stations located in the aircraft supporting the frequency bands specified in regulation 4(3) and systems complying with the GSM standards specified in the regulation 4(2);

“dBm” means decibel milliWatt;

“e.i.r.p.” means equivalent isotropic radiated power;

“MHz” means megahertz;

“Mobile Communications services on Aircraft (MCA services)” means electronic communication services as defined in Article 2 (c) of Directive 2002/21/EC provided by an undertaking to enable airline passengers to use public communication networks during flight without establishing direct connections with terrestrial mobile networks;

“network control unit (NCU)” means equipment to be located in the aircraft that ensures that signals transmitted by ground-based mobile electronic communication systems listed in Table 1 of the Schedule 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 consisting exclusively of an aircraft BTS and NCU which are established and used under and in accordance with a wireless telegraphy licence which has been granted under section 8 of the Act.

### **Exemption**

**3.** The establishment, installation or use of any wireless telegraphy apparatus on board an aircraft complying with the terms, provisions and limitations set out in regulation 4 is hereby exempt from the provisions of section 8(1) of the Act.

### **Terms, provisions and limitations**

**4.—(1)** The exemption provided for in regulation 3 shall be limited to wireless telegraphy apparatus which satisfies the conditions set out in paragraphs (2) to (9) of this regulation.

(2) The wireless telegraphy apparatus must comply with the GSM standards published by the European Electronic Communications Standards Institute, in particular EN 301 502, EN 301 511 and EN 302 480, or equivalent specification.

(3) The wireless telegraphy apparatus may only operate in the frequencies 1 710 - 1 785 MHz and 1 805 - 1 880 MHz (“the 1 800 MHz band”) and must only be used for MCA services.

(4) The wireless telegraphy apparatus may only be used at a minimum height above ground of 3 000 metres.

(5) The wireless telegraphy apparatus may only be used where the transmission power of all wireless telegraphy apparatus is limited by the aircraft BTS to a nominal value of 0 dBm at all stages of communication, including initial access.

(6) The wireless telegraphy apparatus may only be used where the e.i.r.p outside the aircraft emanating from the wireless telegraphy apparatus transmitting at 0 dBm does not, at a height above ground specified in Column 1 of Table 2 of the Schedule, exceed the value of the maximum e.i.r.p. specified in Column 2 of that Table in relation to that height above ground.

(7) The wireless telegraphy apparatus must be used on a non-interference and non-protected basis.

(8) The wireless telegraphy apparatus must be on board an aircraft –

(a) over, or for the time being over, the United Kingdom or UK territorial sea;  
or

(b) registered in the United Kingdom but not for the time being over the United Kingdom or UK territorial sea.

(9) The wireless telegraphy apparatus must connect to a relevant network which complies with the following conditions for the purpose of providing MCA services –

(a) the NCU must prevent the receiving wireless telegraphy apparatus within the frequency bands listed in Column 1 of Table 1 of the Schedule, from registering with the systems on the ground listed in Column 2 of that Table;

(b) the total e.i.r.p outside the aircraft emanating from the NCU or aircraft BTS must not, at a height above ground specified in Column 1 of Table 3 of the Schedule, and at the frequency bands specified in Columns 2(a) to 2(d) of that Table, exceed the power level specified in those Columns of that Table in relation to that height above ground.

[xxx]

Chief Executive of the Office of Communications  
For and by authority of the Office of Communications

[xxx]

**Schedule**

**Regulation 4**

Table 1

Column 1	Column 2
Frequency band (MHz)	Systems on the ground
460-470	CDMA2000, FLASH OFDM
921-960	GSM, WCDMA
1805-1880	GSM, WCDMA
2110-2170	WCDMA

Table 2

Column 1	Column 2
Height above ground (metres)	Maximum e.i.r.p, defined outside the aircraft, resulting from the wireless telegraphy apparatus in dBm/channel at 1800 MHz
3000	-3.3
4000	-1.1
5000	0.5
6000	1.8
7000	2.9
8000	3.8

Table 3

Column 1	Column 2			
Height above ground (metres)	Maximum e.i.r.p. produced by NCU/aircraft-BTS, outside the aircraft in dBm/channel			
	Column 2(a)	Column 2(b)	Column 2(c)	Column 2(d)
	Band: 450 MHz  Channel Bandwidth=1.25 MHz	Band: 900 MHz  Channel Bandwidth=200 kHz	Band: 1800 MHz  Channel Bandwidth=200 kHz	Band: 2 GHz  Channel Bandwidth=3.84 MHz
3000	-17.0	-19.0	-13.0	1.0
4000	-14.5	-16.5	-10.5	3.5
5000	-12.6	-14.5	-8.5	5.4
6000	-11.0	-12.9	-6.9	7.0
7000	-9.6	-11.6	-5.6	8.3
8000	-8.5	-10.5	-4.4	9.5

## Annex 9

# Glossary of abbreviations

**CEPT** European Conference of Postal and Telecommunications Administrations

**ECC** Electronic Communications Committee

**ECS** Electronic communications service

**ETSI** European Telecommunications Standards Institute

**GSM** Global System for Mobile Communications

**MCA** Mobile Communications on Aircraft

**NCU** Network Control Unit

**NoV** Notice of Variation

**RIA** Regulatory Impact Assessment