

Cover sheet for response to an Ofcom consultation

BASIC DETAILS

Consultation title: Mobile Communications onboard Aircraft

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Name of respondent: Jane Cooper

Representing (self or organisation/s): Orange UK

Address (if not received by email): London

CONFIDENTIALITY

What do you want Ofcom to keep confident?

Nothing	<input checked="" 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 to be confidential, 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?)

Yes	<input type="checkbox"/>	No	<input type="checkbox"/>
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DECLARATION

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Ofcom can publish my response: on receipt once the consultation ends

Name

Signed (if hard copy)

Orange response to Ofcom consultation 'Mobile Communications onboard Aircraft' (November 2007)

Executive summary

Orange responded to Ofcom's previous discussion document on mobile communications on aircraft in May 2006, and we welcome the opportunity to continue discussions as part of this consultation. Orange continues to support, in principle, the use of mobile communications on aircraft. However, we do believe that there needs to be full consideration of the impact of the use of spectrum and consumer issues.

At the time of the last consultation, Orange's primary concern related to the lack of discussion regarding the legal and regulatory position regarding the access and licensing of the relevant spectrum to enable the provision of mobile services to customers on aircraft. We still have concerns around this area but understand the principle of mutual recognition. However, we would like to be clear that MCA does not set a precedent for spectrum access in the future.

We also continue to have concerns regarding the possible interference between on board systems and terrestrial networks-and how Ofcom could practically investigate the source of any interference,

Question 1:

Do you have any comment in relation to the authorisation of MCA systems on the basis of a common European approach?

Answer 1:

Orange is supportive of the development of a European Framework to provide mobile services on aircraft and views the proposed service as a valuable extension of mobile services for customers. Orange supports Ofcom in working towards a European Framework for the authorisation and mutual recognition of authorisations across Europe as we believe it is the only way that such a model can work effectively.

Question 2:

Do you agree that the ECC Decision and associated technical requirements and limits will adequately protect terrestrial networks?

Answer 2:

Orange has continuing concerns that the ECC technical requirements fail to adequately protect terrestrial networks. Annex I provides the detail of the following concerns.

1. Firstly, we believe that the current ECC report 93 significantly over estimates terrestrial network antenna side lobe roll off performance by up to 15dB at elevations between 10 and 90 degrees. Orange believes a revised pattern, representative of the worst case side lobe performance of deployed network antennas, is necessary to avoid significant underestimation of side lobe gain. We therefore suggest that the minimum coupling loss analysis and associated SEAMCAT analysis should be re-run using more realistic antenna patterns to assess the impact on the conclusions of the report.

Secondly, we do not believe that the cumulative effect of increasing EIRP with altitude on terrestrial networks has been taken into account. The cumulative effect of allowing increased EIRP limits will result in the risk of a considerably higher noise rise than 1dB to the terrestrial networks. Orange suggests that each aircraft should be required to reduce the maximum power of its MCA at a specified rate at increasing altitudes above the minimum ceiling of 3000 metres.

Thirdly, Orange has concerns regarding the investigation of interference. We believe that the difficulties of investigating interference which occurs as a result of short duration, time varying, location varying, distant airborne sources have been underestimated, and that practical investigation and enforcement will prove near impossible.

Fourthly, and finally, Orange supports defined EIRP limits from the aircraft but has concerns at the difficulty of measurement in the near field.

Question 3:

Do you agree that the initial authorisation regime of equipment for MCA should be via licensing rather than licence-exemption?

Answer 3:

In its previous response to the Discussion Document, Orange stated that MCA operators should not be exempt from the need for individual licensing for on-board equipment. Orange continues to support a licensed approach.

It is Orange's clear view that the provision of mobile communications on aircraft is providing a mobile service to customers and that there is no reason why the operators providing such a service should be subject to any other regulatory environment than those operators currently providing a terrestrial service.

Question 4:

Do you agree that the aircraft operator should be the licensee of the radio equipment used for MCA?

Answer 4:

Ofcom discussed the appropriate licensee of the radio equipment in its previous Discussion Document. Orange was, and still is, supportive of Ofcom's preference for the aircraft operator to be the licensee of the radio equipment used for MCA.

Question 5:

Do you agree that the authorisation of radio equipment for MCA in the 1800 MHz spectrum band should be granted via a Notice of Variation (NoV) to the existing aircraft licence?

Answer 5:

Currently, it is proposed that the installation and operation of an onboard MCA system is completely under the control of the aircraft operator. It would therefore be simple and effective to license the aircraft operator to operate the MCA system via the issuing of a NoV to the existing aircraft radio licence.

Orange supports this view.

Question 6:

Do you agree that under the current licensing framework no additional fee should be payable for MCA spectrum authorisation?

Answer 6:

In its consultation document, Ofcom states its view that it 'does not currently envisage any additional fees being charged for the use of the spectrum as a result of it being licensed¹.' Ofcom does not believe that there is a spectrum management justification or need to do so. It is not clear what spectrum management justification Ofcom is considering. There will be additional interference monitoring to be implemented and there will be registration of the licensed users.

Furthermore, Orange is of the firm view that, in the UK, our 1800MHz spectrum is licensed to Orange. To this end, it falls to the relevant operators to sub lease the required spectrum to any operator that may require access to the spectrum. Sub leasing of the spectrum will become a reality and possible following liberalisation of the 2G spectrum (currently under consultation from Ofcom). Until this time, we understand that the draft COCOM Recommendation proposes that MCA Authorisations will be distinct from Authorisations for terrestrial services.

To this end, it is clear that MCA providers are a special situation and this does not therefore set a precedent for future applications of this type. In addition, such access does not mean that the use of the spectrum is on a licence exempt basis, and the licensees must continue to adhere to the technical conditions as set out in the ECC Report.

Question 7:

In your opinion do you think that MCA services would fall within the scope of the EC Regulation on roaming? Please explain why you think that MCA services would or would not fall within the scope of this regulation.

Answer 7:

In its consultation, Ofcom considers whether MCA systems must comply with the EC Regulation on roaming charges on public mobile telephone networks in the Community.

While the Regulation makes no explicit mention of services on aircraft, Recital 16 to the Regulation states "A common approach should be employed for ensuring that users of **terrestrial** public mobile telephone networks when travelling within the Community do not pay excessive prices for Community-wide roaming services[...]" (emphasis added). Article 2 of the regulation goes on to define the home network (provider), the visited network and roaming customer, by reference to provision of 'terrestrial' services.

We understand that the ERG already has taken the view that MCA services fall outside the scope of the Regulation.

Orange would urge transparency of consumer pricing information by the MCA providers.

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¹ Paragraph 3.5

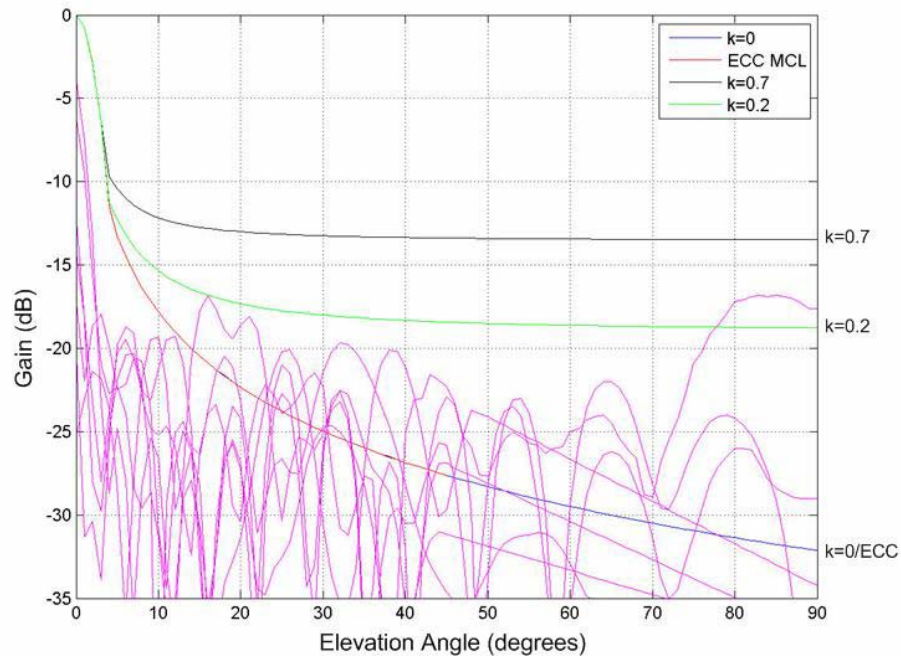
Annex I: Interference concerns

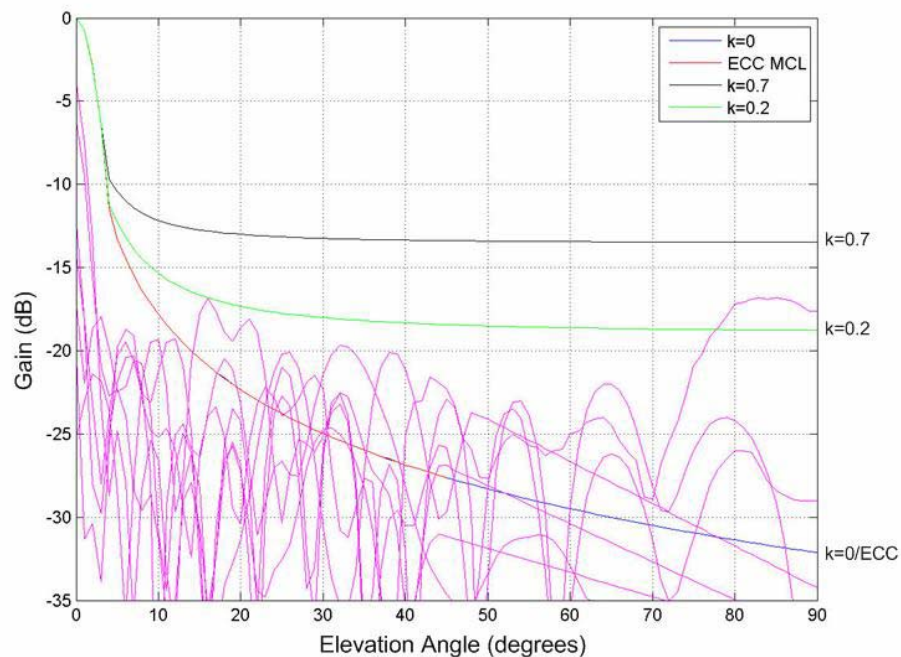
Orange has continuing concerns that the ECC technical requirements fail to adequately protect terrestrial networks:-

a) Terrestrial network antenna side lobe roll off

ECC Report 93 significantly over estimates terrestrial network antenna side lobe roll off performance (referenced from ITU Rec. F-1336-1). Orange has considered the patterns of a selection of antennas used in its network Fig.1 and found that the report under estimates side lobe gain by up to 15dB at elevations between 10 and 90 degrees.

Fig 1
Gain(dB)





ECC Report 93 uses a pattern conforming to $k=0$ for minimum coupling loss calculations. (ITU Recommendation F-1336-2 patterns $k=0.2$ & $k=0.7$ are displayed for reference). Orange believes a revised pattern which is representative of the worst case side lobe performance of deployed network antennas is necessary to avoid significant underestimation of side lobe gain. Orange suggests that the minimum coupling loss analysis and associated SEAMCAT analysis should be re-run using more realistic antenna patterns to assess the impact on the conclusions of the report.

b) Allowing increased EIRP with altitude

(ie allowing increased EIRP with altitude whilst not considering the cumulative effects on a terrestrial network). The ECC simulation considered that a single dominant interferer would contribute most to a 1dB terrestrial network noise rise with contributions from other aircraft being less significant due to reduced EIRPs with increasing altitude. However maximum allowable EIRP values in the consultation document appear to have been calculated on the basis that each aircraft may contribute up to a 1dB noise rise. The cumulative effect of allowing these EIRP limits is the risk of a considerably higher noise rise than 1dB to the terrestrial networks. Orange recommends that each aircraft should be required to reduce the maximum power of its MCA at a specified rate at increasing altitudes above the minimum ceiling of 3000 metres.

For example, the proposed consultation document single aircraft EIRP limit in the UMTS 2000 band at 8000 metres is +9.5dBm but the ECC analysis calculated that an EIRP of only -17.7dBm was sufficient to block UMTS 2000 terrestrial signals at that height. The allowing of excessive EIRP limits, which aircraft operators have no incentive to operate below, and which place terrestrial networks at increased risk is unacceptable. EIRP limits should be set sufficient to block the terrestrial signal at that height (with a tolerance margin) and not significantly higher.

c) Investigation of interference

Orange has concerns that the difficulties of investigation of a short duration, time-varying, location varying, distant airborne source have been underestimated and that practical investigation and enforcement will prove near impossible. Will Ofcom, for example, have access to full records of all aircraft flight paths through UK airspace including altitude & position against time?

d) Validation measurement of EIRP limits

Orange supports defined EIRP limits from the aircraft but has concerns at the difficulty of measurement in the near field. ECC report 93 notes that windows in an aircraft fuselage can act as a phased array causing much higher "antenna" gain in certain directions.