

## **Ofcom - Ultra Wideband**

I am writing in response to your consultation document on Ultra Wideband issued on 13<sup>th</sup> January 2005.

The CAA has a concern that the radio environment by the introduction of Ultra Wideband may have an adverse effect on the operation of existing aeronautical systems. Given that the CAA's primary concern is safety, any potential detrimental impact may have to be offset by a change in operational procedures and approaches with a consequential effect on the capacity of the UK's air traffic control system. Specific comments to the questions asked are contained in annex 1 to this document.

Therefore we welcome the move by Ofcom to propose a flat out of band limit of  $-85$  dBm/MHz which removes our concerns with the FCC proposed limits below 500 MHz. Nevertheless we remain concerned that a number of our services, especially primary radar, that operate above 500 MHz are likely to be affected by the proposed limits and would wish to see the proposed mask revised in such a way that protection of these services can be guaranteed. To this end we would support the need for the protection levels given in the latest version of the ECC Report 64 on the "Protection Requirements of Radiocommunication Systems below 10.6 GHz from Generic UWB Applications" to be maintained for aeronautical services until a figure can be derived from practical testing.

Should Ofcom decide to carry out any practical testing with respect to the interference potential of UWB devices on aeronautical systems, especially radar, then the CAA would be prepared to provide practical support to this programme. From subsequent discussions after the publication of the consultation document, the CAA understands that Ofcom intend to proceed with this testing.

### **Civil Aviation Authority**

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**ANNEX 1  
CONSULTATION QUESTIONS  
CIVIL AVIATION AUTHORITY RESPONSE**

**Question 1: Are these the appropriate topics to be consulting on?**

The CAA would agree that these are the appropriate topics to be consulting on. However we would suggest that additional consultation is necessary to consider what should happen if the introduction of UWB causes interference to existing services.

**Question 2: Do you agree with this analysis of our statutory duties? Are there any important factors that have been omitted?**

The CAA agrees that all of the factors listed are relevant to Ofcom's statutory duties, however we would like to see an additional duty relating to the protection of existing services. Terms such as undue interference would indicate that whilst a service may be able to live with the interference, there will be an impact on the service such as reduced revenue earning potential, or additional infrastructure cost to maintain safety levels.

**Question 3: Do you agree with the economic study? Are there other studies that Ofcom should be conducting?**

Whilst the CAA accept these results, they were limited to Personal Area Networks operating within a building. This is only one application for which UWB may be used and did not consider in any detail the effect on Radars. In the CAA's view these studies are limited in their application and cannot be taken as the overall economic benefit to the UK.

As an illustration in 1999 the economic value of a landing slot at Heathrow for a specific day was estimated at £9million per annum. Were the introduction of UWB to cause the approach radar to fail it's safety case then again based on 1999 figures the traffic loss at Heathrow would be approximately 40 movements per hour. This would result in a total economic cost of £6billion per annum until an alternative solution has been found

Ofcom should consider conducting a wider economic benefit study that considers the impact of all proposed applications of UWB on existing/future services. This should include consideration of the cost of using other technologies to provide the same functionality that UWB is expected to (e.g FWA for the provision of Set-top box to television wireless connectivity).

**Question 4: Is there a better way that future use of the spectrum could be taken into account?**

The CAA would agree that the approach taken by Ofcom is appropriate.

**Question 5: What is the most appropriate solution to the potential interference from UWB to DFWA?**

The CAA has no comment on this issue.

**Question 6: Would it be possible to achieve sufficient isolation between radio astronomy and UWB through practical methods of physical separation?**

The CAA has no comment on this issue.

**Question 7 Are there any other options that we should consider?**

A study should be conducted into the effects, both technical and economic, of the introduction of UWB on aeronautical Radars.

**Question 8: Are there any major technical studies that we have omitted?**

Whilst there are no technical studies that have been omitted, a majority of the studies are based on theoretical analysis. Where these studies indicate the potential for an existing

service to suffer interference then Ofcom should commission a practical study to verify the results of the theoretical study.

**Question 9: Have we made an accurate assessment of the existing studies?**

The CAA would dispute the claim by Ofcom that the aeronautical studies include safety margins in excess of 20 dB. The study is bound to be conservative given the safety criticality of the service provided, however only one State has questioned the studies, this has resulted in changes being introduced into the Studies being conducted under ECC TG3 and ITU Task Group 1/8 since the publication of this document. The results of the studies quoted in this document are therefore out of date and should be updated.

**Question 10: Do you agree that we should seek a common European framework for the introduction of UWB?**

The CAA agrees that Ofcom should seek a common framework both within Europe and world-wide. It is likely that UWB technology will be fitted to personal portable devices which will be transported around the world, be operational without the owner necessarily being aware and hence have the potential to cause interference in a State other than the one in which it was approved and sold. It is therefore essential that standards should be harmonised wherever possible.

**Question 11: Have we proposed the most appropriate mask? Will it be possible to deliver equipment conforming to this mask?**

In the CAA's opinion it has not been proven that the mask proposed will protect existing services from interference. As to whether it will be possible to deliver equipment conforming to this mask, this is not a matter for the CAA.

**Question 12: To what extent should we define parameters such as those listed above? What is the most appropriate definition for each of these parameters?**

Ofcom or another regulatory body needs to define sufficient parameters such that the use of UWB devices will not cause any additional interference, to existing services, than that accepted at the time UWB is authorised for use. Guidance notes for users, other than specialist equipment, are unlikely to have any effect and hence are a waste of time..

**Question 13: Is our proposed approach to international bodies appropriate?**

Provided that the approach taken leads to a harmonised standard then the CAA can agree with the approach.

**Question 14: How should we best deal with the precedent potentially set by our proposed approach to UWB?**

Studies need to be undertaken into how a services interference margin should be apportioned. With increased sharing between services the allocation of the interference margin percentage needs to be considered and whether the amount allocated to UWB is fair compared with that allocated to other sources

**Question 15: What should Ofcom's role be in setting and monitoring EMC standards?**

The CAA would agree that this is a key element of Ofcom's work but would disagree that UWB interference is analogous to EMI generated by computer clocks, one is an intentional radiator whilst the other is unintentional.