Cover sheet for response to an Ofcom consultation

BASIC DETAILS

Consultation title: **Ultra-Wideband**

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Representing (self or organisation/s): **AMSAT-UK**

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Nothing	X	Name/address/contact details/job title	
Whole response		Organisation	
Part of the response		If there is no separate annex, which parts?	

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Yes		No	

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Name James D Heck AMSAT-UK Signed (if hard copy)

Introduction

AMSAT-UK represents the interests of Radio Amateurs who design, build and operate satellites under the regulations of the Amateur Satellite Service.

Our members carry out innovative experimental work with satellite communications using frequencies allocated to the Amateur Satellite service between 21 MHz and 24.5 GHz.

Since the launch of the first Amateur Radio Satellite in 1961, a total of 51 satellites have been launched by Radio Amateurs from various countries. Currently there are over 15 operational satellites in orbit operating in the Amateur Satellite Service, including an Amateur Radio Station on board the International Space station, a facility supported by our members.

Radio Amateurs are currently constructing their first Interplanetary Vehicle, a Mars Orbiter scheduled for launch in 2007. This will use the Amateur Satellite 10.45 GHz allocation to send data back to Earth for reception and analysis by Radio Amateurs.

Further information on AMSAT UK is available at www.uk.amsat.org and about amateur satellites generally at the AMSAT North America web site at www.amsat.org

Ultra-Wideband
Consultation Questions and Answers

Q1: Are these the appropriate topics to be consulting on?
No Comment

Q2: Do you agree with this analysis of our statutory duties?
Are there any important factors that have been omitted?
No Comment

Q3: Do you agree with the economic study? Are there other studies that Ofcom should be conducting?

The study fails to take into account the loss in economic value of the spectrum that is degraded by UWB. The spectrum between 3 and 6 GHz would if auctioned yield considerable sums of money, however, the introduction of UWB in this spectrum will significantly reduce the money that can be raised. UWB devices will appear in every home in the land. They will raise the noise floor to the extent that these frequencies will be unusable for other services.

Q4: Is there a better way that future use of the spectrum could be taken into account?
No Comment

Q5: What is the most appropriate solution to the potential interference from UWB to BFWA?
No Comment

Q6: Would it be possible to achieve sufficient isolation between radio astronomy and UWB through practical methods of physical separation?

No, the proliferation of UWB devices will inevitably cause significant problems for Radio Astronomy.

Q7: Are there any other options that we should consider?

UWB should be restricted to frequencies above 6 GHz the deployment of this technology in 3.1 – 6 GHz would destroy a region of the spectrum that is required for future mobile communications.

Q8: Are there any major technical studies that we have omitted?

No study has been made of the impact of UWB on the Amateur Radio community. Radio Amateurs are responsible for much innovative development work in their 2.31, 3.4, 5.65 and 10.0 GHz allocations. This work is typically done by Amateurs in their own home and would be adversely affected by UWB devices in neighbouring houses.

The Amateur Satellite Service has allocations at 2.4, 5.65, 5.83 and 10.45 GHz and the ground stations are based in urban areas. The users of the service deal with very weak signal levels and a serious degradation of the noise floor caused by UWB would make this service unusable. As well as receiving the weak satellite signals Radio Amateurs also transmit to the satellites using these frequency bands. What would be the impact of these transmissions on UWB devices in neighbouring homes? No assessment has been made of the impact UWB would have on this service.

A full study should be made of the impact on both the Amateur Radio and Amateur Satellite Services.

Q9: Have we made an accurate assessment of the existing studies?
No Comment

Q10: Do you agree that we should seek a common European framework for the introduction of UWB?

Given the free movement of people and products across Europe a common European framework is the only rational approach.

Q11: Have we proposed the most appropriate mask?

Will it be possible to deliver equipment conforming to this mask?

We believe the mask is too wide, UWB systems should not be permitted below 6 GHz.

Of the two competing systems for UWB, OFDM Alliance (Intel) and the Freescale Direct Sequencing (Motorola, there is no doubt that the Intel OFDM system is the only one capable of fully meeting the OFCOM mask requirements. The OFDM system has the advantage of having more scope for spectral sculpting which would permit sharing of spectrum with other services.

Q12: To what extent should we define parameters such as those listed above? What is the most appropriate definition for each of these parameters?
No Comment

Q13: Is our proposed approach to international bodies appropriate?
No Comment

Q14: How should we best deal with the precedent potentially set by our proposed approach to UWB?
No Comment

Q15: What should Ofcom's role be in setting and monitoring EMC standards?

It is hard to see any similarity with EMC, the power levels of range of frequencies affected as several orders of magnitude greater for UWB.

OFCOM clearly has a role in ensuring that UWB transmitters meet emission standards. OFCOM should also ensure that the UWB receivers meet certain basic standards. OFCOMs failure to mandate receiver standards for Car Locks/Alarms operating on 433.9 MHz resulting in considerable problems being experienced when these systems where used in proximity to other spectrum users on nearby frequencies. The UWB receivers should be capable of operating effectively in close proximity to other transmitters which are also using the 3.1 – 10.6 GHz spectrum.