

AviationAdvocacy

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**Aviation Spectrum: for Sale or Rent?  
Implications of the UK Ofcom discussion paper**

## **Introduction**

In 2005, following an 'Independent Audit of Public Spectrum Holdings' Ofcom, the UK Telecommunications regulator recommended that the Government should introduce fundamental changes to the way public sector spectrum holdings are managed. Traditionally, this spectrum has been allocated at no cost. The report proposed the introduction of Administered Incentive Pricing (AIP) to bring market forces to this spectrum. Two of the areas most affected by these proposals are the aeronautical and maritime sectors, which have used this spectrum for many years for radars, communications and safety broadcasts, at no cost.

Ofcom commissioned the well known consultants, Indepen and Aegis, to produce a study on the application of AIP to aeronautical and maritime spectrum with a focus on aeronautical radar and radio applications. Indepen have now delivered that report. This article examines some aspects of the consultants' report, and in particular RSA, radars, and the suggested cost of the spectrum.

It is expected that Ofcom will carry out a public consultation based on the consultant's report and proposals developed by Ofcom, the CAA, MCA and DTI arising from it in the autumn. Ofcom is often regarded as a thought leader in telecommunications regulatory work and it is likely that other European (and other) regulators will be watching these developments very closely.

## **Recognised Spectrum Access (RSA)**

RSA is an alternative to the conventional form of spectrum licensing under the Wireless Telegraphy Act (WT Act). Under the WT Act bands of spectrum are licensed for a fee. RSA offers protection to the users of frequencies where such use cannot be described within the terms of a license. It is suitable for passive services, such as radio astronomy, or 'receive-only' systems where the transmission originates outside the UK. Furthermore, Crown Bodies using spectrum are not licensed and RSA is the proposed mechanism that Ofcom is developing to provide a means for such bodies to trade and lease spectrum as necessary, outside of the terms of the WT Act.

Perhaps not surprisingly, given this dual use by Ofcom, the report appears to use RSA in two different ways too. In some parts of the report RSA is used when referring to the protection and performance of receivers. In other parts of the report it appears to be referring to a means of charging end parties for the spectrum used. In these cases it takes the debate forward by linking RSA use to WT Act licences. If nothing else, this is a means of charging Crown Bodies for the spectrum that they use. However, it is, of itself, not enough. The CAA for example, is a public corporation not a Crown Body. NATS on the other hand is a company, rather than a Crown Body.

In any event, what is clear is that the report is searching for a suitable vehicle for the commercial licensing of spectrum used by the Crown, whether directly or by

delegation to deliver what have been, to date, considered to be ‘public services’. This includes, for example, radar services.

Introducing a fee for access to spectrum in this area will add cost to the services that these public service providers currently provide. In the case of aviation, that will bring the proposal within the terms of the ICAO Air Navigation Bureau’s Economics Panel. They would likely uphold the terms of the ICAO Policy on Charges, that the charge be based on transparent costs, meaningful consultation and is reasonable for the service provided. Of more concern is that this charge would relate to the UK only, rather than be applied consistently around the world.

### Issue of Radar Systems

The report identifies some special issues associated with radar systems. For most applications using the radio frequency spectrum there are various management techniques which can be used to reduce the risk of interference to other applications and services in the adjoining spectrum bands. However these techniques are difficult to apply to radar systems, where the pulses of very high power can cause out of band emissions, resulting in interference to other systems and applications. The report considers that AIP should be paid for these emissions as well, together with the more relevant in-band transmissions. This risks ‘double dipping’ on AIP fees, and sets an interesting precedent that says that users of a band are also responsible for any ‘guard’ bands that are also in place. This is not the case in a number of other bands where there are similar guard bands (for example in the GSM telephony bands).

The report also concedes that the regulatory regime relating to out of band emissions for radar is poorly developed. It is arguable that the technical issues need further development too. There is a need to consider if improvements to the technical regulatory regime are required. If these improvements can be made there will there need to be a further look at whether there continues to be a need to introduce AIP on out of band emissions for radars. Until then it is premature.

### General Points from the Report

The report is proposing that AIP should be applied in line with the following proposals.

Frequency Band (MHz)		Aeronautical Usage	AIP estimate Note 1	Priority Classification Note 2
From	To			
108	118	108 – 112 MHz ILS (localiser) 108 – 118 MHz VOR & GBAS	£ 217,000 per MHz	Medium
118	137	VHF communications	£ 610,000 per MHz	High

328.6	335.4	ILS (Glide Path)	£ 217,000 per MHz	Medium
590	598	Ground Radar (50 cm)	£ 275,000 per MHz	High
960	1215	DME, Secondary radar (1030/1090 MHz)	£ 252,000 per MHz	High
1215	1350	Primary radar	£ 252,000 per MHz	High
2700	3100	Primary radar	£ 252,000 per MHz	High
4200	4400	Radio Altimeters	£ 42,500 per MHz	Low
5000	5150	MLS	£ 42,500 per MHz	Low
5350	5470	Airborne Weather Radars	£ 42,500 per MHz	Low
9000	9500	Ground movement and airborne radar	£ 34,000 per MHz	Medium
13250	13400	Doppler navigation aids	£ 25,500 per MHz	Low
15400	15700	Ground movement radar	£ 25,500 per MHz	Medium

Note 1: AIP estimated value is derived by taking the mid point of the marginal benefit value for the current use and the marginal benefit value of the next most feasible use of the spectrum with generally a downward adjustment applied to the value to cover the uncertainties involved.

Note 2: The meanings of the priority classifications are:

High – High demand from own and/or alternative use

Medium – Existing use not congested. Potential for alternative use but demand not as high as in the high priority category

Low – All airborne uses and there is limited scope for releasing spectrum in UK

The report contains few, if any, details on the impact that these charges will have on aviation business cases. There is an urgent need to examine this impact, particularly in the area of the high charges suggested for VHF communications, a fundamental part of European aviation communications. There is also a need to look at these proposals in the light of other developments such as the European Single Skies initiative and the increasing number of small airports being opened up for commercial air transport.

### **Public Consultations**

Based on this report Ofcom, in conjunction with other regulatory agencies, including the CAA, will develop a public consultation document. That document will seek to obtain public views on these policies. All these various inputs will then be taken into account in developing the policy to be applied.

The consultant's report has also identified various other issues that need to be addressed or considered. Further details of these issues can be provided on request.

## **Conclusion**

This report raises various issues that could have a significant impact on the aviation industry and its costs. It is also likely that its impact will not be limited to the UK, but that rather it will be the 'thin edge of the wedge'. It is important that aviation industry fully understands all the issues. Aviation Advocacy can assist in providing this understanding.