

**Question 1: How should Ofcom manage the process of taking advice from users, regulators and government on efficient apportionment of AIP fees in the maritime and aeronautical sectors? Are any new institutional arrangements needed?:**

The process should be managed using the agreed UK Code of Practice on Consultation, and must ensure that all elements of the Code are adhered to. The process must include consultations with stakeholders and, critically, a full impact assessment including financial and economic impacts, technical feasibility, options and opportunities, with full involvement from all stakeholders.

The complexity of the international regulation, the economics, safety and operating constraints by which the aviation industry is bound should be recognised in the consultation. We suggest that, for this reason, aviation spectrum is not treated in the same way as business radio frequency management (because it is a completely different entity), and that maritime usage is also dealt with separately. A one-size-fits-all approach cannot produce a fair and equitable process or deliver the efficiency benefits that are the goal of the consultation.

New institutional arrangements are not required, but OFCOM's consultation must take full account of all relevant International regulations before drawing up proposals.

The consultation and any potential implementation must also take into account, and ensure alignment with, the new pan-European Single European Skies II (SES II) regulations and SESAR initiatives which aim to lay out Europe wide institutional arrangements for managing scarce resources, including Spectrum. The UK will be bound by the SES II regulations as a consequence of its membership of the EU.

We suggest that a meeting is held with aeronautical stakeholders to discuss ideas before formal consultation, and that this session would be best hosted or co-ordinated by CAA in their capacity of both aviation experts and regulators.

**Question 2: If you consider that our proposals for pricing ground station users for any spectrum would be likely to have a detrimental impact on safety, please let us know. In order for us to understand your assessment fully, it would be helpful if you could outline the mechanisms whereby this might happen.?:**

Aviation is an industry with highly regulated safety and security needs both within the UK and internationally. Those regulations are mostly developed by the International Civil Aviation Organisation, which is an organ of the United Nations. These regulations make the use of spectrum integral to aviation's safety- critical and safety of life systems, rather than optional and a commercial value system. Owing to these safety obligations, aviation users will be unable to respond to any incentivising of efficiency by reducing the usage of spectrum, without falling foul of the regulation placed upon us or placing new obstacles in the way of voluntary efforts to exceed these requirements.

We have grave concerns that OFCOM's Spectrum pricing proposals would have

adverse effects on both safety and capacity if they were to be implemented. Light aircraft and small airfields that currently use radio could, potentially, be unwilling or unable to afford to pay the increased Spectrum pricing charge. Smaller airfields may no longer provide radio equipment at their airfields, and likewise, light aircraft may decide not to carry radio equipment. This could result in unknown numbers of 'invisible' movements infringing upon controlled airspace. This is a significant safety issue for both the light aircraft and the commercial aircraft in that airspace. In fact NATS highlights infringement of controlled airspace as one of its highest priority safety issues.

**Question 3: Do you have any evidence which indicates that AIP charged to ground stations could have a material detrimental impact on UK competitiveness?:**

The economic climate in which UK airlines find themselves is extremely challenging and unstable. The framework of airport regulation and ownership is changing, airline consolidation and alliances are gaining momentum to enable survival, and competition is opening up internationally with the advent of Open Skies, overlaid with world economies facing recession and uncertainty in oil pricing and availability. All these factors leave UK and overseas airlines attempting to find any way to reduce costs, and maintain competitive pricing to enable them to continue to attract customers.

We assert therefore that the introduction of AIP will have material impact on UK competitiveness in a number of ways.

The scale of the fees currently proposed as a guideline, is not at a level which NATS is likely to be able to absorb without pass through. This means that, as well as paying fees for our own Radio licensing, we would be subject to substantial increases in the unit costs that we as an airline pay to NATS in user charges.

As a UK-based carrier, with a network entirely dependant on UK flying, we obviously have no way of avoiding UK airspace, and will therefore be liable for a far more significant increase in enroute charges than overseas carriers whose network flies only in part to the UK. These non-UK carriers, when faced with sudden increases in fees, will also have a clear financial incentive to reduce UK over flight to destinations outside the UK. This could clearly have environmental consequences of increased fuel burn and emissions as airlines start to fly longer routes avoiding or minimising time in UK airspace.

In both these ways, the UK carriers will be subject to a clear increase in baseline costs compared with overseas carriers.

To compound this problem, UK carriers will be unable to absorb the costs of the AIP fees, which will require an increase in ticket prices. In a world of competition for the best prices, any increase in ticket prices will adversely affect UK carriers' ability to compete with the overseas carriers who have avoided the full weight of the AIP costs, potentially contributing to the inability of the UK carriers to survive.

We also believe that, as referred to in Question 2, applying AIP will have an impact on the usage of radio by light aircraft and GA and that should this happen, it could result in unknown numbers of invisible movements infringing on controlled airspace.

If this were to happen, not only would there be safety implications, but NATS and NSL would be forced to make adjustments to the separation distance between aircraft, resulting in a noticeable decrease in already severely constrained airspace capacity at a time when capacity increases are needed. This reduction would result in increased levels of delays, contributing to airline costs, and forcing reductions in flying schedules. This alone has severe economic consequences for the competitiveness of UK Aviation and the UK economy.

The health of the airline industry is also vital ingredient for the health of the UK economy through direct employment, procurement of goods and services, and the economic growth brought by businesses and passengers travelling to the UK. For example, between 2% and 3% of GDP is estimated to be generated directly by traffic through Heathrow airport.

Any increase in direct costs will require airlines to reduce costs elsewhere in their businesses. Such cost-reduction measures could include reducing headcount, increasing outsourcing of goods from overseas, and reduction in the number of routes flown.

All of which would have an impact on the health and competitiveness of the UK in a global market.

**Question 4: Taking into account the information available in this document, including that set out in Annex 5, our initial views on VHF radiocommunications licence fees and on the reference rates for bands in other uses, and any information you have about the organisations to whom we are proposing to charge fees, please provide any evidence that you think is relevant to us in considering the financial impact of the fees we intend to propose for VHF radiocommunications, or for other uses:**

We do not believe that the proposals as they stand are able to achieve the OFCOM objective of promoting efficient use of radio spectrum.

The continued viability of aviation demands and depends upon the use of the RF spectrum. As a result, the radio spectrum is highly utilised, but within significant constraints imposed internationally.

These international constraints not only govern the assignments of spectrum within the aviation industry, but also constrain the usage of this spectrum to be for the use of aviation alone, thereby preventing, by international obligation, the allocation or usage of these frequencies to non-aviation users.

It is also worth noting that in aviation, the applications used require specific frequency bands because of the physics of what they are being used for. Furthermore, in aviation, communications and navigation spectrum use happens over much greater ranges (than, for example in the maritime sector) because of the increased line-of-

sight, which is possible because of the height at which aircraft are flying. For example, use of VHF for line-of-sight communications, radar for detection etc.

Because of the distances involved, VHF Spectrum cannot just be reallocated if it were to be released in the UK. There is a minimum distance required between stations transmitting on the same frequency. Effectively any spectrum in these bands that is released in the UK will generally only be able to be reused by other EU states, not the UK.

Therefore if VHF spectrum were in some way freed within the UK by 'more efficient' usage all that would happen would be that the freed spectrum would be snapped up elsewhere within Europe, still for use within the aviation sector and funded courtesy of UK Aviation, but would remain unavailable to any other users. This would not be efficient.

For both these reasons: international obligation, and technical feasibility, no non-aviation users could use this spectrum, and therefore no other users are being denied.

In other words, the value of the spectrum for alternative users is zero, and by the definition set out in the Cave Audit, this supports an opportunity cost of zero.

**Question 5: Do you agree that there is little to be gained, in terms of economic efficiency, from charging AIP to WT Act licences for aircraft:**

We believe that because there are no viable alternative technologies available to the aviation industry, and as a consequence of the international constraints and obligations that constrain allocation and usage of spectrum, there will be no economic efficiency gains from the implementation of AIP charges to any aspect of the aviation sector, including WT aircraft licences.

In fact the AIP proposals are likely to act in exactly the opposite way from that which is proposed. UK aviation and the UK economy may suffer to the extent of producing a negative impact (see question 3), decreases in use of radio usage by light users and GA could cause reductions in airspace capacity as separation distances are increased to maintain safety.

Furthermore, the funds paid by the aviation industry in AIP fees, by airlines, NATS and other users, would operate merely as a stealth tax any offsetting financial benefits and without any ability to produce the desired outcome which was the basis for charging. The costs would need to be funded from those businesses and would be likely to end up reducing the availability of capital required for investment in the technology and innovation that could eventually create opportunities for spectrum efficiency.

**Question 6: Do you consider that we should discount fees for any particular user or type of user? Specifically, do you consider that there should be a discount for charities whose object is the safety of human life in an emergency:**

The threshold between use of radio for preserving safety of life and preventing emergency, and using radio retrospectively in a safety of life emergency is very fine, and the value or prioritisation of one cannot necessarily be taken over the other.

In the extreme demonstration of this, Aviation emergencies in progress depend on use of spectrum to communicate with emergency services. In these circumstances, the safety of life of those on board could be equally preserved by the aviation use, as by the emergency service/charities responding.

We are not against safety of life charities gaining exemptions or discounts, but suggest that all aviation usage of Spectrum is critical to safety of life, and that this should be recognised as a fundamental difference compared with Business radio spectrum that is used purely for commercial gain. For this reason, both aviation spectrum and safety-of-life charity spectrum should be treated in the same manner.

**Question 7: Do you agree that Ofcom should apply AIP to ground stations? use of maritime and aeronautical VHF radiocommunications channels, to help manage growing congestion in current use and to ensure that the cost of denying access to this spectrum by potential alternative applications is faced by current users?:**

British Airways does not believe that AIP fees should be applied to the aeronautical sector.

The economic theory underlying the opportunity cost being used as the basis for AIP charges is dependant on the assumption that a) the user/s have a choice in whether to use that service or not, and b) the item being charged for could be used by any alternative user who wished to pay to have access to it.

In the case of the aeronautical sector, neither of these points is valid, making the use of the theory inappropriate in any context. It will simply operate as a tax, which is not the objective stated by OFCOM.

As aviation users the spectrum we use is tightly defined by international standards and obligations agreed through the International Civil Aviation Organization (ICAO), by which, of course, the UK is bound. We cannot operate outside the assigned frequency bands and the technology available to aviation users is constrained by physics and the need to protect radios from interference.

It can thus be demonstrated that aeronautical users have no choice in using spectrum as it is currently allocated.

Likewise, the spectrum used by aviation is internationally designated and managed by ICAO for aeronautical use only. No other user would be permitted to use this section of spectrum, even if there was spare capacity available in the frequency bands discussed. Even if spectrum in the UK were freed as a result of AIP, the created ?surplus? could not be offered to any other users in the UK owing to the propagation of VHF impacting neighbouring States or other users.

Again, this demonstrates that the spectrum frequencies used by aviation, would be unavailable for use by any other sector or user within the UK.

For both these reasons, the use of opportunity costing principles, as set out in the Cave Audit (2005 PG 56), makes charging inappropriate, as the cost should be considered zero.

**Question 8: Do you agree with our initial view that it would be appropriate to apply a pricing system similar to that already existing for Business Radio licences to maritime and aeronautical VHF communications? If not, what are your reasons for proposing that we should develop a fee structure for maritime and aeronautical VHF channels which is distinct from that already established for Business Radio?:**

No, as we have stated in response to previous questions, British Airways believes that Aeronautical use of spectrum is fundamentally different from Business Radio, and the two cannot be treated in the same manner.

Aeronautical usage is critical to safety of life, is not an optional service that can be selected, and is not used directly to generate commercial gain.

Business radio is not subject to the same constraints of global allocation of frequency nor does the physics of the frequency usage affect business radio ? over much shorter ranges - in the same way that it does aviation usage.

We suggest that, in order to make any valid and informed proposal of a Pricing system, an impact assessment must be carried out to determine the complexities and constraints of the use of aeronautical spectrum, and the economic effects on the sector of the introduction of any such scheme. Any such impact assessment, which should have been carried out before the consultation proceeded, must also take account of the UK's international treaty obligations and a realistic assessment of the opportunity costs of aviation spectrum.

**Question 9: Are there any short term reasons specific to the sector(s) why it would be inappropriate to apply fees from April 2009?:**

British Airways believes that, not only is the principle of implementing AIP to aeronautical spectrum flawed, but we are providing strong evidence in this paper to show that to do so in the short and medium term would be not only ineffective, but also extremely damaging economically.

We suggest that the timescales for introducing any form of Spectrum Efficiency incentive must be set in accordance with realistic timescales for change. To introduce a charging mechanism when it has been acknowledged by OFCOM (Spectrum Stakeholders meeting 29/08) that the users who will pay the fee have no potential to

change their behaviour, is entirely against the principle of Opportunity cost and is highly damaging.

Given the evidence which the UK Aeronautical sector has presented during the consultation process thus far: that it will be unable to change its usage of spectrum because of internationally governed obligations and restrictions, and lack of available alternative technology, it is unclear why the timescales for introduction have been set in the way proposed.

The implementation of AIP from 2009 is entirely unrelated to any realistic timescales. The consultation has been initiated without giving any valid reason for the timing and the short timescales proposed for introduction.

The broadcasting industry was set a timescale for conversion from analogue to digital technology, but this was structured over an extended period to allow for the changes in equipment needed by users, even though the technology was readily available, and entirely within the control of the UK.

We would suggest that, should an impact assessment prove AIP to be an appropriate and effective way of increasing Spectrum efficiency, the timetable for implementation should include an appropriate timescale for the development of new technology, which currently does not exist, followed by a further time period for the changeover to new equipment. It should also consider the costs to the aviation users of investing in such new equipment.

Such R & D effort would all also need to be set against a parallel piece of State-lead work, at international level, to influence and negotiate an international change to aeronautical equipage.

What cannot happen is UK-lead regionalism in equipment requirements. UK airlines have to work within a global framework. To do otherwise risks burdening us with costs of one-off or regional applications. Attempting to work regionally adds complexity and cost, and risks safety through fragmented and unclear processes.

The current downturn in the economic climate and declining passenger numbers, weakening of Stirling, unstable fuel prices, the forthcoming introduction (Nov 2009 and beyond) of a range of UK and European environmental measures and taxes aimed at aviation emissions all set the context of the most challenging of times for the aviation industry. At the present time, over 30 carriers have already ceased operations, a number of them being UK based, and more are expected to fail.

IATA has estimated losses of \$5.2bn in the aviation industry this year, with further losses of \$4.1bn in the coming year.

All of these facts, cumulatively, foretell unprecedentedly difficult times for aviation. Implementation of AIP at this time or in the foreseeable future would be an additional punitive tax, without any possible benefit, when UK airlines can ill-afford further increases in costs and would impact profitability that is already highly fragile.

The introduction of AIP must be aligned with the SES II regulations and SESAR

project, which aim to develop and introduce the technology and framework for managing Spectrum, and which offer a realistic opportunity for the European and International collaboration needed to make any meaningful change.

Realistic timescales for the development of alternative technologies and European Change are 2015-2020 onwards.

**Question 10: Ofcom would welcome stakeholders' views on the factors which should be taken into account when apportioning fees between individual users of radars and racons:**

We suggest that because of the complexity of this issue, it should form part of the impact assessment that must be carried out as part of this consultation.

**Question 11: Do you agree with our initial view that a reference rate of £126k per 1 MHz of national spectrum for L band and S band radar spectrum would achieve an appropriate balance between providing incentives to ensure efficient use of spectrum while guarding against the risks of regulatory failure in setting the reference rate too high? If you consider a different rate would be more appropriate, please provide any evidence that you think we should take into account.:**

We do not agree that AIP is an appropriate mechanism for producing efficient use of this part of the spectrum, and we cannot therefore agree that these are appropriate rates.

It is imperative that any potential use of these frequency bands by other non-aviation users is taken into account in the impact assessment and that any such use is not allowed to result in interference and loss of performance.

**Question 12: Do you agree with our initial view that a reference rate of £25k per single MHz of national spectrum would be appropriate for deriving fees for licences to use X band radar?:**

We do not agree that AIP is an appropriate mechanism for producing efficient use of this part of the spectrum, and we cannot therefore agree that these are appropriate rates.

It is imperative that any potential use of these frequency bands by other unlicensed non-aviation users, is taken into account in the impact assessment and that any such use is not allowed to result in interference, loss of performance and reduced air traffic capacity.

**Question 13: Do you agree that, generally, spectrum used by aeronautical radionavigation aids is currently uncongested? Do you believe that this may change during the next few years and, if so, approximately when?:**



In our experience as an airline and user of spectrum, we completely disagree with this statement.

There has been steadily increasing demand for spectrum allocation in the aeronautical bands, without any increase in the bandwidth of spectrum that was originally allocated to aviation use.

The number of users of the aviation bands of spectrum has substantially exceeded the originally envisaged number and demonstrates the need for the existing international allocation rather than national arrangements.

We do not anticipate any change within the next few years, other than an ever-increasing demand for spectrum from aviation applications and users.

**Question 14: Do you agree with the basis on which Ofcom has arrived at its initial view on reference rates for aeronautical radionavigation aids?:**

As discussed in our responses to the previous questions, British Airways does not agree that AIP is an appropriate mechanism for producing efficient use of aeronautical spectrum, and we cannot therefore agree with the basis by which OFCOM has suggested reference rates.

During the stakeholder session held by OFCOM on 29/08, OFCOM agreed that on the evidence presented concerning internationally governed constraints, and unavailability of alternative technology at this time, the opportunity for the users of the spectrum to facilitate change was extremely limited, and that this change would have to be state/internationally lead.

This admission by OFCOM supports the case that the opportunity cost, as set out by the Cave Audit, is zero, and therefore any AIP fees should be set at zero to recognise the fact that spectrum frequencies cannot be made available to other users.

For the foreseeable future the setting of any reference AIP rates above zero cost, demonstrates fundamental flaws in the basis by which OFCOM has arrived at its initial views.

**Comments:**

Introduction

British Airways (BA) welcomes the opportunity to respond to the OFCOM consultation on the application of spectrum pricing to Maritime and Aeronautical sectors.

The airline's main base is London Heathrow Airport, the UK's primary international hub airport and one of the busiest airports in the world. BA also operates from 9 other airports in the UK, and worldwide, to 154 destinations in 75 countries. It employs more than 43,000 people, of whom 38,000 work in the United Kingdom.

BA offers almost 550 flights in total to and from Heathrow each weekday, with a further 190 services a day to and from London Gatwick daily and 44 per day to and

from London City.

BA is the largest single user of NATS services in the UK, and also holds Radio Licences at both Gatwick and Heathrow Airports.

We request that this is taken as a stand-alone response and not as part of a combined aviation response.

As an aviation user, we do not attempt to answer these questions on behalf of the Maritime sector

### Summary

We believe that the application of AIP to aeronautical spectrum is inappropriate and highly damaging both to the aviation industry and potentially to the UK economy. It would also discourage the use of equipment that improves air safety.

Owing to international regulation and obligations on equipment usage, safety standards and spectrum allocation, UK airlines and the aviation sector are in fact, unable to respond to any efficiency-incentivising charging scheme.

Because of these international agreements and safety requirements, allocation and efficiencies can only be changed at a global level: cross-border in Europe and further afield. In order to be effective this has to be done in a coordinated international way by government authorities through ICAO as part of the SES II Network Management proposals and SESAR Initiatives. OFCOM has not taken account of the international aspect of aviation's use of spectrum, which is an important difference with other UK users.

The consultation process has also failed to take into account any regulatory requirements when calculating opportunity costs, which is a fundamental pillar of the Cave Audit on which this consultation was initially based.

We strongly object to the implication from OFCOM (Stakeholder meeting 29/08) that regardless of the ability for the sector to influence efficiency, AIP charges will be introduced because Spectrum is a resource that must be charged for.

OFCOM has also failed to follow the required consultation process. The fact that a full impact assessment, with input from all stakeholders has not been produced, is unacceptable. Such an assessment must be carried out, using an independently appointed resource, before the consultation process can continue, and before any recommendations for AIP can be considered valid.

The AIP proposals as they currently stand will be completely unable to deliver the results that the OFCOM consultation claims for them. They risk causing potential safety implications, grave economic damage to UK aeronautical operators and the UK economy with no possible benefit other than generating revenue for the UK Treasury.

Finally we believe that these proposals would not further the interests of citizens in relation to communication matters, nor do they comply with several of OFCOM's

own regulatory principles.

Consistent with the requirements of 'Better Regulation', these principles state that there should be a bias against intervention and that any intervention should be evidence-based and proportionate, seeking the least intrusive regulatory mechanism to achieve the policy objectives.

There is also a commitment to assess the impact of regulatory action before imposing regulation.

OFCOM should consider a more proportionate alternative, which would be to work with the Civil Aviation Authority to improve spectrum efficiency through international negotiation.