

**Question 1:** Do you agree with our proposed core principles of setting AIP? Are there additional matters that it would be helpful to clarify?

In general we agree with proposed principle 1 but it must be made absolutely clear that science will suffer if the costs of AIP fees are not fully compensated by increases in grants. Publically funded science and therefore the ability of scientists to respond to AIP is governed by government spending review cycles. Many of the spectrum requirements for science are driven by fundamental physical laws, the benefits exist but may be less easy to quantify than for a commercial service. There is a large question over who will be responsible for paying the fees as the science community is diverse with funding coming from many sources.

In many cases it is not likely to be practical to tie down the requirements for individual spectrum bands to a specific science project, research body, or even to a specific scientific discipline. Therefore AIP fees will most probably have to be funded through the research councils. It is not clear how these fees will then be recovered from any other non-council supported users, for example privately funded researchers or international institutions. Identifying the non-council funded users and making them pay in proportion to their use would place a large administrative burden on the councils.

Principle 2 recognises the long term nature of some uses. The science services requirement for spectrum is long term and science led. We should perhaps define “long term” for science as projects of 20 years or more duration. Remote sensing and space missions are a good example, the spectrum needs may not be known until the preliminary research phase is completed and sensitivities can often change through advances in technology. Once a measurement is in progress it may need to continue for a long time, possibly indefinitely if gradual changes over time are to be observed. New measurements using new spectrum or making more intense use of currently used spectrum may become important through new discoveries.

Principle 3 indicates spectrum in excess demand should be subject to AIP. This should not be universal. It will be impossible for scientists to compete against some commercial applications. There is often flexibility over the choice of frequency band for a commercial service but natural resonance lines can not be changed.

We agree with principle 4 which considers the time frame for AIP.

Principle 5 deals with AIP and spectrum trading. Science is not a market as such so it is not clear how trading is intended to work. There will only be a benefit to science from AIP if the research councils are allowed to re-invest any money from the spectrum they release.

Principles 6 and 7 deal with fee concessions where there is a social benefit and to promote innovation. In general we agree with these though again, the diversity of the science community may make the collection of AIP fees impractical or at least administratively costly.

We are pleased to note that in principle 8 it is stated that the auction value of nearby spectrum will not be directly used to determine AIP fees.

Principle 9 does not appear to apply to non-commercial spectrum use.

## Fee-setting methodology

**Question 2:** Do you agree that we should charge cost-based fees where AIP is not appropriate or AIP would not cover our costs? How do you think we should set cost-based fees in future fee reviews? Are there particular factors you think we should take into account, for specific licences fees or cost-based fees in general?

We agree with this, especially in cases where there is a clear science use but as noted above that use is spread between many users or subject to a long investment cycle. AIP may not be appropriate but it may then be beneficial for a single research council to adopt responsibility for managing that spectrum. The costs to OFCOM would then be minimal.

**Question 3:** Do you agree with our proposed fee-setting methodology principles (set out below)? Are there additional matters that it would be helpful to clarify?

We broadly agree with the four proposed methodology principles. The benefits of science applications can not be considered to be purely financial. This should be taken into account in calculating individual license fees.

## Plans and priorities for spectrum fee reviews

**Question 4:** Do you agree with our proposal to move away from regular full-scale reviews to reviewing in response to evidence, as set out in Option 5?

Yes. The minimum notice term must be compatible with science funding reviews.

**Question 5:** Do you agree with our process for assessing the priority of future fee reviews? Are there other sources of evidence of misalignment between fees and spectrum value or spectrum management costs that you can think of, and what weight should we give them?

Yes. Reviews should be based on demand. It is recognized that fees could vary in either direction. However, we have already noted that many science missions are long term. Taking the example of a space mission, it is not possible to change the frequencies used after launch. Therefore to avoid science being held to ransom, any increase in spectrum cost or spectrum re-allocation will need to be postponed until the end of the life of the mission. A mission life post launch is typically up to 10 years.

**Question 6:** Based on our proposed criteria, or other criteria you would propose we use, what do you think our priorities for future fee reviews should be? Please tell us your reasons for thinking these should be prioritised. Do you agree that we should prioritise a fixed link fee, as some stakeholders have suggested to us?

We agree with the proposed criteria. We would not want to carry a burden of frequent reviews, especially as this could lead to uncertainty over future fee levels in longer term projects. Review should only occur if there is a clear change of circumstances, either through technological or service development. We believe it is important for the fee payer to also be able to instigate a review.

**Question 7:** Do you agree with our proposed approach to post-review evaluations?

Yes, this is a good approach although the most efficient users are not necessarily those able to pay the highest fees.