

**Title:**

Mr

**Forename:**

David

**Surname:**

Hall

**Representing:**

Organisation

**Organisation (if applicable):**

David Hall Systems Ltd

**Email:**

davejhall@aol.com

**What do you want Ofcom to keep confidential?:**

Keep nothing confidential

**If you want part of your response kept confidential, which parts?:**

**Ofcom may publish a response summary:**

Yes

**I confirm that I have read the declaration:**

Yes

**Ofcom should only publish this response after the consultation has ended:**

You may publish my response on receipt

**Additional comments:**

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

### Principle 1

We are not convinced that AIP is the correct tool for sending long term signals related to spectrum usage. The various different spectrum management tools all create their own eco-system and there is a need to determine the most appropriate eco-system, which could vary between applications, for sending these signals.

As an example we have identified the following cases of the need for different tools though we could have identified others. With broadcasting spectrum it is the digital dividend resulting from technology change rather than pricing mechanisms that is causing significant changes in spectrum usage. Conversely with defence spectrum it appears to be a mixture of AIP and pressure to release spectrum that have caused changes in spectrum usage. We consider that these examples support the view that AIP is just one of many tools and needs to be used in combination with others as it does not appear to be very powerful on its own. Additionally taking measures now to attempt to match future demand and supply of spectrum is unlikely to be successful as the future demand for spectrum is unpredictable and dependent on a range of factors. We consider that there is little or no relationship between AIP and these factors.

Another means of increasing spectrum usage efficiency is to improve the quality and selectivity of the receivers that are used and AIP can only play a very indirect role in this process. We consider that there should be a more effective tool, which needs to be developed, for encouraging improvements in receiver selectivity

### Principle 2

We consider that predicting optimal long term use is an invalid approach and that a better approach would be to develop a system that allows for significantly more flexibility in the use of spectrum so as to meet the changing spectrum requirements. Thus there should be more of a focus on developing long term flexible use of spectrum. AIP can assist in this process though we consider that it is not the most appropriate tool to use. We consider that other actions are more appropriate than using AIP and these actions must be used to achieve this long term objective.

In particular changing technology and the way that consumers and citizens use spectrum based applications are likely to have a significant influence on long term spectrum usage so there is a need to take these factors into account. However these trends are difficult to predict and we do not consider that AIP is effective in influencing these trends.

Some of the reports published by Ofcom relating to spectrum demand indicate certain services are likely to show the most significant increased demand for spectrum and we wonder what long term signals AIP will be required to provide in these cases. The signals could be used to encourage the provision of more spectrum for these applications or alternatively the signals might be encouraging people not to use the application so as to reduce the spectrum demand and we wonder how the decision will be taken on which option is applicable and will users take notice of the signal. Additionally from some of the reports it appears that one of the greatest demands for spectrum will be related to licence-exempt usage where AIP is not applicable.

### Principle 3

We consider that AIP should only be applied to spectrum in cases of excess demand where other management tools are not appropriate for whatever reason.

For alternative uses we consider it may be more appropriate to identify alternative uses and then determine how these uses are constrained by current regulatory, policy and equipment factors. When these constraints have been identified then approaches for reducing or removing these constraints should be developed to permit any possible alternative uses. We

also consider that increasing receiver sensitivities will make sharing spectrum easier thus reducing some of the existing constraints on multiple uses within the same frequency band.

#### Principle 4

Investment cycles can vary between different types of use so we consider that the investment cycle may not be an appropriate time frame when considering alternative uses of spectrum. We also consider that where spectrum is to be transferred to a more valuable use then the existing investment timeframe might be reduced to make the spectrum available earlier. Thus we consider that a more refined approach is required for determining the appropriate time frame.

#### Principle 5

We consider that currently there is little spectrum trading as there are too many barriers and constraints on the use of spectrum. We consider that more effort should be focused on establishing a freely functioning non-fragmented spectrum market which would reduce the need for AIP.

Some of the issues are discussed in our responses below but we consider that the key factors in establishing an effective spectrum market are

- ? Increased flexibility in international and national allocation tables
- ? More flexibility in the standards specified for services and applications, by this we mean choice in the frequency band to be used
- ? Means found to resolve issues related to the established equipment base acting as a deterrent to changing spectrum use
- ? A market that functions in a similar manner to markets in other sectors

#### Principle 6

We consider that a different approach is required is required to valuing/determining efficient use of spectrum. We consider that the value should be based on a combination of the following factors

- ? The opportunity cost of the spectrum
- ? The contribution that a specific spectrum usage makes to GDP
- ? The wider benefits to society resulting from that specific spectrum usage

These values could vary between stakeholders so there is a need to find means of addressing these issues so that the appropriate real value can be determined.

The wider benefits to society also need to take into account Ofcom's statutory obligation to take into consideration the interests of citizens. We consider this is an important issue which does not appear to have been fully taken into account in the current proposals.

We note that recently there has been some questioning of Ofcom powers to apply telecommunication policies such as spectrum pricing to other non-telecommunication sector. We consider that this issue needs to be addressed and resolved to ensure the wider policy objectives are met.

#### Principle 7

We consider that a more flexible use of spectrum is the most appropriate means to support innovation. However we consider that discounted cost-based fees could provide some additional benefits.

#### Principle 8

If a less fragmented fully functioning spectrum market could be developed then the market value of spectrum would reflect a more realistic value that was not distorted by a range of

constraining factors. Currently auctions and other forms of market valuations are not producing realistic valuations due to the fragmented and inefficient existing spectrum markets which reflects the various constraints that are placed on the spectrum. We consider that spectrum markets are currently in transition from a command and control system to a market based system and unfortunately this process is still far from complete. When a full market based system is operating we consider that there will be little need for AIP. We agree that currently the market values are not a good indicator of AIP values but over time this will improve as the market values become more realistic.

#### Principle 9

We agree that there is a need to take the uncertainty factor into account and we consider that the extent of the uncertainty may have been understated.

**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 that in the current circumstances cost-based fees are required where AIP is not appropriate for whatever reason. However we consider that a different approach may be required in future. With the market playing a bigger role in the provision of spectrum we consider that there will be a need for an authorization process to permit the use of spectrum and the associated authorization charge could replace the current cost-based fees. This is an issue that requires further investigation with the objective of developing an effective process.

**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?:**

#### Methodology 1

We wonder if congestion is an appropriate means of assessing demand for spectrum as we consider that there could be potential demand in some frequency bands which is not realized due to various constraints on the usage of that spectrum.

We also consider that the implications of sending signals now that in future a frequency band will become congested need to be better understood. These signals could result in a lack of investment in the specific frequency band, or it could result in innovation enabling other frequency bands to be used, or alternatively it might have no impact on usage of a particular frequency band so that congestion increases. Thus there is a need for the implications of all these possible outcomes to be fully understood. However we recognize that such actions may not be the result of signals given by AIP but could be due to other factors and this needs to be taken into account when considering the implications.

#### Methodology 2

We agree with the proposals contained in the consultation document. However we consider that the cost of using alternative spectrum to provide the given service or application should be taken into account when developing reference rates.

We recognize that spectrum is not homogenous and that different frequency ranges have different characteristics but in many cases one frequency range could be substituted for

another with few difficulties. However it appears that the physical differences are amplified by a range of factors such as

? Allocations to services in the ITU Radio Regulations and National Frequency Plans

? The standards and specifications that have been developed to support specific services and applications

? The existing equipment base

which make it difficult to use frequency bands for other purposes. Thus there is a need to consider if any of these constraints can be reduced to make the spectrum more homogenous and the implications of taking such action. We consider reducing these constraints should result in a more active spectrum market. The first two factors identified above have the advantage of preventing interference and permitting better use of the spectrum so if these constraints are relaxed then other approaches may be required to manage interference between different uses.

The existing equipment base is the most difficult issue to address and it does not appear that AIP can assist with this issue. Conversely making the spectrum allocations more generic appears to be the easiest issue to address and AIP may have a role to play in this process by illustrating the value of services and applications within different frequency bands.

#### Methodology 3

We consider that this is a valid approach. However should it just be the value of the spectrum denied to other users that is included in the calculation or should it include the wider benefits resulting from the use of that spectrum. We tend to favour the latter value.

#### Methodology 4

When assessing the balance of benefits and risk/costs we consider it is important that impact on different stakeholders is fully taken into account as the various stakeholders might be impacted differently.

We also have some concerns regarding the possible use of AIP to address competition issues and we do not consider that AIP should be used in this way.

### **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?:**

We agree with the proposals and we consider that over time the need for evidence based reviews should decrease as the market becomes more effective in establishing spectrum values.

### **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?:**

We agree with the process given in the consultation document. We expect that over time AIP values should more closely reflect market values and that the market will become more important in valuing spectrum.

We consider that there might be a need for Ofcom to publish more information on the relationship between spectrum value such as AIP value or cost-based fees, the benefits resulting from the use of the spectrum, and the amount of spectrum used. Currently it appears that there is little relationship between these three factors.

**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 proposals and consider that fixed links should have high priority for review as it appears that the current fees are not effective.

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

We agree with the proposed approach and we consider that the second bullet point in paragraph 5.33 is important and needs to be addressed.