SRSP: The revised Framework for Spectrum Pricing
Met Office response to Ofcom Consultation

Overall comments:

The Met Office recognises and supports the necessity to liberalise and release spectrum to meet increasing technological and socioeconomic demand. However, we are concerned that if there is not sufficient counterbalancing of market mechanisms with consideration of wider societal benefit derived from certain applications of spectrum, then some vital underpinning services that may not be able to afford to pay full "market values" may be lost with subsequent detrimental or even life-threatening impact for the UK and its citizens. Two meteorological examples of these "wider social benefit" applications stand out:

1) **National capability underpinning civil contingencies or activities pertaining to public safety –** Certain frequency bands are designated internationally through the Radio Regulations for certain purposes and reflect the natural operating characteristics of such an application. One such example is weather radar, where the S and C bands in particular are harmonised to allow meteorological radars suitable access to the spectrum due to their utility in detecting heavy rainfall events and subsequent flash flooding at these frequencies (mainly C-band in the UK at present). However, these parts of the spectrum could also potentially be used for commercial application, and purely economic consideration/incentivisation of these bands could lead to public bodies being financially required to enter ill-advised sharing arrangements or even cede vital bandwidth where issues of public safety could be at risk (in exchange for shorter term commercial exploitation). We believe that ***services that offer a wider social benefit, especially with regard to public safety, should merit concession from AIP or other fees.***

2) **Satellite-borne passive remote sensing of the earth** – Under footnote 5.340 of the Radio Regulations, it is stated that certain bands may not be used for the purposes of transmitting as this would interfere with reception by satellite of naturally-occurring frequencies vital in activities such as the detection and prediction of climate change or severe weather events. Even very low levels of interference in these bands can seriously degrade the value of such observations (on which many billions of Euros are spent annually through international cooperation) as it is impossible to distinguish between (eg) low-power license exempt sources of RFI and naturally-occurring phenomena. Such global monitoring activities cannot account for national borders either and thus it is necessary for all national administrations to respect internationally-agreed bands for earth observation so as to avoid the risk of harmful interference to the global picture. As a result, ***these passive bands should be exempt from any fee***, either in terms of AIP (opportunity cost even for lower frequencies such as 1.4GHz should be zero because of this international exemption anyway) or a cost-based approach, offering wider social benefit to a broad range of users. It should also be noted that charging for these bands within the UK could not only cause disharmony amongst the international community and present problems in assessing who should pay for their use within the UK, but also potentially lead other national regulators in other countries to follow the UK's lead. If the principle designated user in a third country was found to be unable to pay for such a band, this could then be sold to the highest alternative use and inadvertently degrade not only observations over that territory but indirectly impact UK environmental monitoring and forecasting capability and undermine the value of the investment in it.

In conclusion, *the Met Office advises that a clear policy of assessing the wider socioeconomic value of some areas of spectrum is followed and urges that not all frequencies be subject to pure market valuation.*

Met Office

Met Office answers to specific questions in the consultation:

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 these core principles provide a relatively sensible basis for application of spectrum charging – however, in line with our overall comments above, we feel we should express the following statements and/or reservations.

***Principle 1: role of AIP** - Caution should be applied in use of market valuations of AIP for public-funded or internationally-agreed activities – appropriate management tools need to be fully considered before jeopardising services of wider socioeconomic value.*
***Principle 2: users can only respond in the long term** – We fully support the principle that AIP should reflect long-term procurement cycles, but this should not be the sole consideration. Satellite technology in particular is expensive and subject to long lead times for planning, procurement and deployment of sensor systems, but more important to meteorology is the retention of the naturally-determined passive bands that satellites facilitate which cannot be substituted – this factor should not be discounted as "extraneous regulation" or constraint. Ongoing interference-free availability of the passive bands is essential to be able to detect long-term changes in the environment, thus necessitating that any costs for using this spectrum should not change over considerable periods (ie – decades) and therefore making the introduction of incentive pricing counter-productive.*
***Principle 3: when AIP should be applied** – Evidence of congestion within a band seems in principle a logical approach to gauging current demand for a particular band (though there could be a counter-argument for congestion leading to RFI and therefore decreased value), but this should be balanced against not only wider-socioeconomic value but also the physical properties of a particular band and whether an existing service can in fact function elsewhere, again with particular reference to internationally agreed remote sensing bands. We strongly support international coordination of the spectrum with other countries and rather than seeing "onerous limitations" to the UK, we view certain such agreements as providing a positive basis for protecting (eg) natural emitting frequencies that are vital in contributing wider socioeconomic value though environmental monitoring and would expect that Ofcom fully account for this in excluding such bands from application of AIP. Again, we should reiterate the damaging effects of allowing even low-power devices into exclusive remote sensing bands (eg – SRDs into the 24GHz band), which could destroy years of advances provided by (in particular) satellite technology.*
***Principle 4: the 'relevant timeframe' for AIP** – Again, relating AIP to timescales of longer-term investment cycles is commendable, but does raise some questions as to how a particular timescale could be applied to a band given the potentially differing investment cycles of varying applications that could take advantage of that frequency – and indeed how Ofcom could actually expect to forecast that value accurately in reality.*
***Principle 5: AIP and spectrum trading** – No comment.*
***Principle 6: AIP and wider policy objectives -** We believe that uses of spectrum with a wider social benefit (such as meteorology) <u>should</u> merit significant consideration for concessions from AIP or cost-based fees. Whilst AIP may realise most efficient use of popular spectrum, it may also lead to loss of essential spectrum for certain safety-related activities should the public purse be unable to bear market rates. We advocate fee exemption or reduction for wider social benefit services (such as weather radar) or irreplaceable internationally agreed remote sensing bands.*
***Principle 7: AIP and the promotion of innovation** – The general approach is probably equitable, though there could rightly be questions as to whether this may stifle future innovation to some extent. Alongside issues of wider socioeconomic value, we believe that there is justification for some element of broader consideration rather than just market values on issues such as this.*
***Principle 8: use of market valuations** – We have difficulty in understanding the "market valuation" of AIP if no market mechanism is actually used directly to determine it. Testing the market must be imperative to realising the true value by which these AIP "rental" fees are subsequently determined, and the idea that trading values need not be revealed to Ofcom seems like an opportunity lost. We believe that transparency on the decision-making behind attributing certain values to given bands will be paramount.*
***Principle 9: setting AIP fees to take account of uncertainty** – We would certainly favour a more conservative approach to setting fees, with the destructive impact this could have on both commercial and public usage if prices become over-inflated.*

Met Office

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 believe that services that offer wider socioeconomic (ie – non commercial, relating to civil contingencies or public safety) value should wherever possible be exempt from AIP, whether that results in a cost-based fee or no fee at all. Certainly, we feel that internationally-coordinated (eg) satellite command and control frequencies or remote sensing bands, notably those listed under WRC footnote 5.340, should be exempt from fees – and there is a strong argument for protection of those parts of the spectrum used for innovation or by amateurs. Re: some license-exempt activities (ie – other uses not paying spectrum fees), however, there should be impact studies and thorough consideration of how they may interfere with other licensed services (eg – low power devices in passive bands).

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

In principle, the methodology seems logical, subject to the following comments:

Proposed methodology 1: AIP and congestion *– In line with above comments, this approach seems relatively logical, though there should be some consideration as to whether congestion can conversely lead to decreased fees where use in a band is non-exclusive or non-primary.*
Proposed methodology 2: reference rates *– We are concerned as to how AIP reference rates are calculated and would welcome transparency on how market rates are actually measured and applied.*
Proposed methodology 3: calculating individual licence fees *– No comment.*
Proposed methodology 4: impact assessments *– Given the suggested approach to financial value (perhaps at the expense of wider socioeconomic value), an appraisal of impacts could be a crucial part of the proposed methodology, assuming that this could also be used as a means to redress imbalances potentially brought in by market forces.*

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 have no strong views on this, but while there may be some merit in some timeframe of periodic review, we favour stability and would endorse a sensible long-term approach to any spectrum pricing and review process.

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 have no strong views, but within the context of the proposal outlined in Option 5 this process seems workable.

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 review, as some stakeholders have suggested to us?

We have no strong views on this, though priorities may need to focus on criteria outlined as below in Question 7.

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

Post-review evaluations should be performed as a matter of course and should be used where necessary to redress fees where valuable socioeconomic services have been restricted or priced out of bands by excessive pricing of spectrum.

Any questions or comments regarding this response should be sent to:

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