

Spectrum Framework Review

A Response to the Ofcom Consultation Paper

In section 1.3, Ofcom sets out a summary of the proposed changes to spectrum management, without any indication as to which segments of the spectrum in terms of frequencies are judged to be suited to market mechanisms. Section 4.6 on the balance between market mechanisms licence exempt and command and control are too simplified and do not give any real indication of the intentions.

I believe that the spectrum-trading concept is hardly applicable to frequencies below the 400MHz. I recognise the importance the UK Government has attached to the use of electronic communications in stimulating the UK economy and bringing about organisational change in public services. It should however be recognised that copper networks will continue to dominate electronic communications in the UK for the foreseeable future. This can be seen in the large installed base of fibre optic trunk and street level communications and the widening provision of DSL services.

I note also that radio services at the HF level are International, and controlled in terms of the broadcast reach or harmonisation of frequency allocations. It would therefore appear that the spectrum-trading concept would not be applicable. I also note that many services, such as broadcasting and aspects of Amateur Radio are a separate entity under ITU regulations and the frequency allocations for it are harmonised at the International level.

Whatever the intentions of Ofcom for spectrum trading concept, it should be determined on economic grounds and there should be a balance with public and cultural interests. The legal obligation to protect radio services should be observed by Ofcom.

I welcome the move to an approach that allocates the use of bands without control of purpose. However I am fearful of a situation that permits this without a licence. This simple safeguard must be in place to ensure that Ofcom knows where users may be contacted.

I welcome the commitments given at 4.7.1 that Ofcom will work to resolve interference problems, but we do need to have a clarification of what capacity Ofcom will have for this purpose and how the priorities for enforcement action will be determined. The paper states (2.7) that a key role for the regulator is the prevention of interference, but it is not clear how this will be done or the mechanisms that will be in place for this purpose. This raised the question, what extent the former Radio Investigation Service will be retained.

It is suggested that where there are relatively few users of the spectrum, the regulator could achieve the goal of preventing interference by deciding on the most appropriate use of each frequency band. This does not take account of anomalous propagation and similar natural effects.

There needs to be more careful thought on the move to further unlicensed services. The essence of unlicensed services is such that the regulator will have no information on the density or the growth of such until serious interference problems occur. This will be a particular concern if the population of users of UWB expands rapidly, and in those parts of the spectrum where users share spectrum.

I have particular concerns about cognitive radio (software defined frequency hopping), as again the operation may be difficult to monitor and control. Ofcom has an obligation to support innovation but services such as GPS and Meteorological satellites must not be compromised. I note also that Amateur Radio has demonstrated an ability to use spectrum in an innovative way. Like GPS and Met-sat services they often work with signals that are close to the noise levels in narrower bandwidths, it is therefore not surprising that they have particular concerns for the use of the 1.3GHz and 2.3GHz bands.

I understand that there is to be a further consultation on some aspects of frequencies in the High Frequency (HF) part of the radio spectrum. I hope that it will take into account the many different users, and technologies already in use.

I express my concern at the attitude presented in the document and the reference of "Entitlement to Transmit in Spectrum Licensed to Others", this contradicts established regulations, particularly on interference, as understood by anyone working in the radio field. This sets a very dangerous precedent, and I would like to be assured that Ofcom would provide for interference complaint and any statistics accessible to the general public.

I note the expectation that the switch over from analogue to digital TV will release spectrum that can then be auctioned off to others. This seems to be at odds with what the broadcasters wish to have happen. I hear that the DTV community does not necessarily support this view. If the Governments plan for switchover is to be met and near full coverage of the UK retained for DTV, then a different situation may exist. However, it should be Ofcom who are making these decisions, not the Government!

I have provided comprehensive answers to the questions raised in the Review.

John J Pink

Annex D

Consultation questions

Q1: Are there any other major medium- to long- term spectrum management issues that this review should be considering? Are there any other significant technological or market developments that this review should be aware of when developing its thinking?

Response 1.

The issues of possible interference have been treated very lightly. There are threats from many non-radio sources, using increasingly high frequency technology. For example, present plans are to use frequencies up to several 10's of MHz for copper loop communication.

Also, the threat from frequency agile communication systems cannot be underestimated. It presents a uniquely difficult technology to control. It is, already, impossible to identify the source of such short-term interference as it traverses a whole range of frequencies. This is not a future threat; it is a fact evident now.

I consider that the difficulties of regulating the market have been underestimated. The review should more carefully consider how the market might work. Already, there are many indications of in-fighting between rival GSM operators that are un-resolved. For example, in London, interference between GSM base stations is commonplace. The Operators solution, after increasing the level of power, is to infill with more base stations. Where and when will saturation be reached? Who ultimately will take responsibility?

More consideration is needed of the structural impact of a market driven situation. Drawing a parallel with another regulator – it is apparent that the work of the FSA is far from satisfactory – and they have a massive overload of work as a result.

Q2: Do you believe it is useful to publish a compendium of issues? How frequently should it be published? What information should be included?

Response 2.

Yes! There will be many emerging issues, which need to be aired on a regular basis.

The Compendium should be published annually.

It should include current, emerging, and controversial issues, and provide a global view of technology shifts.

It should be results oriented. There should be no sweeping under the carpet, like the '192' saga.

Q3: Are there any other issues of sufficient significance to merit mention in this document?

Response 3.

Yes! The interplay between other regulators is important. The shift to 'market' regulation, necessarily invokes commercial issues between operators, and their compliance with trading practice and financial governance.

What happens to 'spectrum' for example, if an operators goes into liquidation, and the Courts delay how the assets, if any, will be distributed. The issue could take years to resolve, begging the question, what happens to the valuable asset in the meantime.

Then there is the issue of Planning Law (Town & Country Planning Act). The cellular operators will be pushed to in-fill wherever they can – often coming into conflict with planning issues. If Ofcom is permissive, this could create major problems.

Q4: Are there important lessons to be learnt from experience in other countries that is not addressed here?

Response 4.

Yes! Other countries cited in the paper are much less densely populated, easing the potential problems of interference. The UK, and Europe are already so densely populated from a spectrum usage point of view that it is already bursting at the seams.

Even in an empty country like Australia, the issues of 'spectrum smog' are prevalent in urban areas.

Control can have a 'light touch' but it must be there Ofcom must shoulder its responsibilities and not hide from them.

Q5: Do you agree with Ofcom's intent to maximise the use of trading and liberalisation?

Response 5.

No, it is ducking the issue, and will leave many parts of the spectrum in a state of permanent turmoil. The word 'maximise' in the questions should be more properly replace by 'carefully more to'.

Q6: Are there other areas, apart from those identified above, where trading and liberalisation should be restricted? Are there areas identified above where you believe the trading and liberalisation could be fully implemented?

Response 6.

I do not believe that it can ever be 'fully' implemented.

However, there are groupings of users that try to act in a very responsible way, and have tried to work within the framework of the International Standard Organisations. They should be encouraged towards a degree of self-regulation, but Ofcom should participate as a member of such groupings. I have in mind here, the GSM, and 3G fraternities, and the members of the Bluetooth consortium.

However, I would exclude other groupings like the Home-Radio and Zigbee developers, since their naked commercial ambitions are not in keeping with the maintenance of acceptable standard. Even in their own countries, they have divided the Standards makers.

If groupings can be encouraged to work within the framework of International Standards, where they exist, and participate in creating acceptable new Standard where they do not, then freedom and flexibility will work. We are not at that point.

Q7: Do you agree with Ofcom's approach to providing spectrum for licence- exempt use?

Response 7.

No! There should always be some control over the use of spectrum. Even if this simply means that a notification of usage exists. It will be virtually impossible to discover sources of interference without some kind of list of intending users, and furthermore intending users may need this kind of information on which to base commercial and technological decisions. In this context a licence represents a control mechanism that can be mechanical in process, and should not impede usage nor technology.

It may be that the word 'licence' is wrong in the context – perhaps Control-Exempt may be a better description.

Q8: Is Ofcom's proposed methodology to estimate the amount of spectrum provided for licence- exempt use likely to deliver the right results?

Response 8.

Yes, in broad term it should result in the right balance.

Perhaps the question that should be posed here is – what happens if the balance is not correct? What will Ofcom do? Will it be too late if Ofcom's proposals are fully implemented?

Q9: What is the appropriate timing and frequency bands for making available any additional spectrum needed for licence- exempt use?

Response 9.

400 MHz to 3 GHz - now, where used for Cellular telephony

2 GHz to 5 GHz, at a later dates for Control-exempt applications, when usage pattern can be established.

5-10 GHz - now for directional device usage, but not for omni-directional use until usage pattern can be agreed.

Q10: Do you agree with Ofcom's longer-term proposals for spectrum trading?

Response 10.

The 'light touch' scenario and the proposals for spectrum trading concern me. As a long-term operator and observer of the communications industry, I am painfully aware of the pressures that can be brought to bear. This would be fine if the issues were of a 'National' nature, but they are not. International pressures will prevail within commerce, and little Britain will not be able to withstand these if the regulator does not have the right grip.

An example is the influx of so-called licence-exempt product in the Europe. There are products being used which do not comply with current UK or EU standards, both in the commercial arena, and in the domestic market over which Trading Standards have no control, and Ofcom will in turn be able to do little about.

Q11: Is the approach set out here, and in Annex H, for developing technology- neutral spectrum usage rights appropriate? Are there alternatives?

Response 11.

Ofcom must remain cognisant of what technologies are intended to be used, its specification and the potential effects. It cannot stand on the sideline – it must be a referee.

In the fast moving world of technological development there is no such thing as neutrality, and if Ofcom exercises a total hands-off approach, use of spectrum will quickly become un-manageable.

The industry like our Nation needs leadership. Ofcom's role must be to provide that guidance.

Q12: Should Ofcom do more to resolve interference?

Response 12.

Yes! This will become an increasingly important part of its responsibilities if more Control-exempt and technology-exempt arrangements are put in place. A key issue here will be resolving sources of interference, and that underlines the reason for some kind of 'notification of usage' (licence – by any other name).

It will be too late to begin applying controls to licence and technology exempt users after a disaster – like a major airplane crash caused by interference to ILS or Radar systems at Heathrow.

Q13: To what extent should Ofcom intervene in promoting innovation?

Response 13.

This is Political and could prove dangerous. Ofcom should be flexibly permissive in its stance regarding innovation, but keep arms length regarding any promotional activity. It should avoid becoming embroiled commercially in the same way that organisations like the IEC or CENELEC do.

The dangers are, of leaning in favour of suspect commercial developments, or stifling natural entrepreneurship within industry. I am quite sure that Bluetooth and Home Radio would not have been able to develop so rapidly with Government or Quango intervention.

However, unused spectrum should be re-allocated if a licensee has shown no intention of usage, within a reasonable period of time. The way forward here is to look at how licence fees are charged, and if necessary refunded.

Q14: Do you agree with Ofcom's proposed approach to harmonisation?

Response 14.

It is not quite clear as to what Ofcom's approach really is!

I agree with compliance with International Standards, and the participation of UK Industry and Ofcom in the making of new Standards.

What scares me silly is that the EU policy makers do not seem to understand that this whole process has been by mutual consent. This of course takes time!

I have seen moves in recent years to circumvent this methodology, and to fast track solutions for political expediency. This is very dangerous, and could lead to the collapse of the whole process of harmonisation by agreement.

Q15: Can you foresee any problems with the proposed approach to harmonisation other than those listed above?

Response 15.

Yes, this will only work in a framework of mutually agreed Standards. Political intervention in forcing harmonisation could prove very damaging to the spectrum. As stated elsewhere in the text of the Ofcom document – Standards are sometimes agreed only after a great deal of debate and take time. Care must be taken not to force issue, so as to avoid hasty and wrong decisions.

This raises the question as to whether Ofcom can be politically neutral, whilst trying to be technology neutral.

There is very clear evidence that this is not the case with the issue of PLT. The present government's desire to push PLT in the context of Broadband Britain has clearly resulted in Ofcom and other organisations pursuing a non-technology neutral stance. It is notable that the President of the IEE, a position that should respond to input from its members, has overtly taken a stance in favour of PLT. One assumes at the behest of Government intervention.

Can we rely on Ofcom's politics?

Q16: Do you agree with Ofcom's proposal to continue with division by frequency as the primary method of dividing the spectrum?

Response 16.

Yes, this must be the correct primary approach. However, the market and control-exempt approach is appropriate to many higher frequency segments of the spectrum.

Q17: Is Ofcom's approach of not Intervening to mandate entitlements in time appropriate?

Response 17.

No, this will open the door for uncontrolled and unidentified levels of interference.

Already, companies are dropping implementation of radio local networks for fear and uncertainty of potential interference.

Q18: Do you agree with the RIA?

Response 18.

In general yes! It is a good vehicle for the investigative approach on which decisions will eventually be made, and take full account of the commercial needs.

I would contradict the EC in its assessment of the size of the potential market for European enterprises. Most if not all of the benefit will accrue to manufacturers, and developers outside of Europe. The benefit accruing from 'operations' is very suspect even at this stage.

There are serious concerns about the Average Revenue per User in the highly fought after field of mobile telephony. Governments and the EU do not have to manage ARPU, and too soft an approach from a 'soft touch' regulator could be further damaging.

John J Pink
3rd February 2005