

Spectrum Trading Associates response to Ofcom's Spectrum Framework Review - 23 November 2004

Spectrum Trading Associates (STA) is a specialist consultancy set up to provide expert support on all aspects of radio frequency assignment, trading and exploitation and, as such, is pleased to respond to Ofcom's 23rd November 2004 Spectrum Framework Review.

We found the Spectrum Framework Review useful in that it clearly documents the principles proposed by Ofcom for the management of radio spectrum in the UK. Much of what is described is already being adopted but it is still helpful to have a summary of the approach and to see expectations of its impact.

The Review is clear in the preferences it shows, particularly for 'Market mechanisms', but this is only a part of implementing a spectrum management regime. Although it may be outside the terms of reference for this Review there are key policy matters which it would be helpful to have stated. For example auctions are seen 'as the most appropriate means to distribute spectrum that is not currently assigned'. However the design of any auction is crucial to the achievement of the policy intentions behind it. eg setting the number of licences, setting the sizes of blocks of spectrum (including the creation or otherwise of pairs of bands), favouring newcomers or incumbents, setting reserve prices, seeking high bids, etc.

The desire to move away from 'command and control' is clear and welcome but it may take longer than anticipated due to legacy positions. As an example it is noticeable in Administered Incentive Pricing how many exceptions are made to theoretical calculations of spectrum value and how usage specific these prices are with different formulae for each use.

Although we are strongly supportive of spectrum trading and liberalisation as a means of encouraging fuller and more efficient use of spectrum we would stress that it is still unproven on a large scale and it is essential that the effectiveness of using spectrum is continually tracked. Particular dangers are that the spectrum packages which are initially traded may be not well matched to future systems and applications in terms of bandwidths, paired band arrangements, geographic restrictions etc. How much intervention might be appropriate to aid such problems should be reviewed and considered further.

We are concerned with the workload potentially imposed on Ofcom by the adoption of the changes to spectrum management proposed in this Review. Care should be taken to ensure that the level of resource within Ofcom is adequate for both the continuing and new spectrum management tasks. In addition we hope that Ofcom continues its efforts to make the maximum information readily available to third parties such that, as far as possible, trading and liberalisation agreements can be presented to Ofcom in a fully completed form.

We are not happy with the comments about international standards and harmonisation. Some poor experiences must not prevent the UK from being a part of successful international initiatives. Although the conditions and circumstances for a radio standard as successful as GSM may not reappear, the UK is too small to establish national systems and needs to be involved when European or worldwide harmonisation is possible. A worrying trend is the shift from ETSI to IEEE as the source of many radio Standards. Not only does this limit the involvement of UK

industry in early development but it results in spectrum assignment problems through America and Europe being in different ITU regions.

Spectrum Framework Review – Specific 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?

This question seeks comments beyond the use of market forces, licence exempt spectrum, cognitive access and the approach to harmonisation.

It is essential to keep sight of spectrum use elsewhere in the world to ensure that Ofcom's approach is appropriate in terms of achieving best practice in utilising spectrum. In particular technologies which extend the ranges of frequencies suitable for important applications should not be inhibited.

There are many examples of problems which have arisen from not giving sufficient regard to engineering matters. For example, previous difficulties with trying to reverse bands (up/down links) to prevent international interference, the need to ensure the balance between fast moving trading and the roll-out of networks involving thousands of sites with equipment life expectancies approaching twenty years, the desirability of using the best bands for applications and not forever being forced into finding more expensive alternatives elsewhere, etc. These examples point to the need for a spectrum roadmap based on engineering issues, research and new developments, which would influence how and where the economic spectrum management might need assistance.

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

Yes, annually, we agree with the proposed 'compendium'.

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

Only as noted above.

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

We are not aware of much beyond that reviewed in Annex F and G. We would be interested in any information relating to the use of defence spectrum for civil applications in other countries.

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

Yes.

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?

No, no.

However although we are supportive of spectrum trading and liberalisation as a means of encouraging a more dynamic situation and the fuller use of spectrum we would stress that it is still unproven on a large scale and it is essential that the effectiveness of using spectrum is continually tracked. Particular dangers are that the spectrum packages which are initially traded may be not well matched to future systems and applications in terms of bandwidths, paired band arrangements, geographic restrictions etc. How much intervention might be appropriate to aid such problems should be reviewed and considered further.

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

Yes.

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

Yes, although the amount of spectrum that could be needed will be masked by user behaviour and it is also difficult to decide whether to meet the needs of the major hotspots or just the general levels of demand. The problem is the assessment of peak demand in terms of both time and geography. The usage may be very uneven thus making the overall assessment of spectrum need somewhat subjective.

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

The comments made about 5GHz indicate the current drivers in this market. Considerable usage depends on what is installed as standard on laptops and so is controlled by non-UK computer manufacturers. Until 5GHz is installed on mainstream laptops, the band will not serve as a major expansion for unlicensed use.

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

Yes.

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

We found Annex H particularly helpful and consider the concept of defining 'specific' and 'restrictive' spectrum usage rights to be a good means of establishing the allowable methods for liberalising spectrum. We think that this approach will be effective in terms of users being able to make proposals which can be rapidly approved by Ofcom.

Q12: Should Ofcom do more to resolve interference?

We agree that Ofcom must maintain its responsibility for resolving interference issues.

We believe that Ofcom will need to enhance its capabilities in this area because with spectrum trading and higher usage of spectrum, the number of interference claims, including unjustified complaints, is likely to rise. It would be good to improve the speed of resolution of such matters.

We would encourage the publication of metrics of the time taken to resolve the various types of interference complaints.

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

We believe that Ofcom should concentrate its efforts on ensuring that spectrum is made available to enable innovative concepts to be explored by the market.

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

Not fully. We are not happy with the comments about international standards and harmonisation. They seem only partially supportable based on past examples. Some poor experiences must not prevent the UK from being a part of successful international initiatives. Although the conditions and circumstances for a radio standard as successful as GSM may not reappear, the UK is too small to establish national systems and needs to be involved when European or worldwide harmonisation is possible. A worrying trend is the shift from ETSI to IEEE as the source of many radio standards. Not only does this limit the involvement of UK industry in early development but it results in spectrum assignment problems through America and Europe being in different ITU regions.

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

We understand the points made but feel the underlying attitude to harmonisation in the Spectrum Framework Review document is too negative and could undermine situations where harmonisation is the best route.

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

Yes.

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

Based on the current capabilities of cognitive radios we think Ofcom's approach is reasonable.

Q18: Do you agree with the RIA?

Question not found in main part of document.

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