

**Independent Audit of Spectrum Holdings: Emerging Issues Consultation
Document
BBC comments**

Introduction

The BBC welcomes the opportunity to respond to this consultation. There has never been a greater demand for spectrum, nor the potential for more efficient use of it.

Given the large amount of spectrum currently assigned to public bodies, it is entirely appropriate to audit whether this spectrum is being used as efficiently as possible and to review the effectiveness of incentives for making efficient use of spectrum.

However it is essential, in seeking to secure increased efficiency in the use of spectrum, that Ofcom balances the legitimate pursuit of technology- and service-neutral objectives in all spectrum blocks with a recognition that this may not be appropriate in all cases. If services internationally utilise similar spectrum allocations and technology, consumer preferences and the economies of scale, in both manufacturing and marketing, available to manufacturers can be taken into account. Pursuit of these objectives may lose the efficiencies of dedicated or specific technologies or services.

Some technologies would simply work better in some spectrum blocks than in others, notwithstanding any desire for their commercial backers to bid for spectrum in which that technology could work as soon as it become available for re-licensing.

In addition, while market forces ought to play an increasingly important role in determining how spectrum is used, public policy objectives need to be recognised.

Broadcasting, in particular, has since its inception in Europe been assigned public policy objectives and the delivery of social benefits. These are both statutory obligations and meet consumer expectations. Despite rapidly changing media markets, which encompass podcasts, the downloading of music and games to GPRS/3G 'phones and increasing provision of "television" to mobile devices, the BBC sees neither the central role of broadcasting nor the obligations and expectations for public service broadcasters substantially diminishing in the medium term.

The increasing range of outlets for audiovisual content has complemented broadcasting and, for major news and sporting events, consumers still overwhelmingly turn to broadcast outlets for live coverage.

It is therefore essential that broadcasting can continue to fit into the developing UK spectrum framework - this applies to access to spectrum both for reaching consumers' receivers and for Programme Making and Special

Events (PMSE), the essential (but largely invisible) support for today's broadcasting.

In particular, the framework needs to recognise that broadcasting's use of spectrum may not be as flexible as alternative uses. For example:

- public service broadcasters have considerably less flexibility to respond to incentives in the manner in which other users of spectrum might - they cannot just withdraw services or switch off transmitters;
- UK broadcast news is internationally recognised as being of high quality and able to respond rapidly to changing events - this increasingly requires guaranteed *immediate* access, not just by the BBC, but also by ITN, Sky News, Reuters and APTN, to the spectrum necessary for wireless radio microphones ("mics") and cameras;
- consumers and politicians have a low tolerance to interference to broadcast services, especially the public services;
- there is considerable political, public and electronics manufacturer endorsement for the crucial support public service broadcasters provide to emerging broadcast technologies which, initially, have limited commercial viability - this applied to FM radio and DAB Digital Radio and will apply to free-to-air HDTV;
- broadcasters have a crucial role to play in supporting UK cultural life, whether that be The Proms, Wimbledon or the 2012 Olympics, where the pictures supplied throughout the world will reflect directly on the international image of the UK; and
- manufacturers, retailers and consumers have long benefited from harmonised broadcast spectrum across Europe - while non-broadcast uses might wish to have access to this spectrum, the ability of broadcasters to use other spectrum is severely limited.

Much of the detail of this consultation relates to spectrum used by public bodies for non-broadcast uses and where, even with that spectrum potentially opened up for other uses, the BBC sees limited efficient applicability for broadcast uses.

The BBC's response will therefore focus on whether likely future demand for spectrum for broadcast uses should be met by the market and, to the extent that it is, on what terms.

Answers to questions

Q2. Do you agree that public bodies should, in general, expect to meet future spectrum needs through the market? Are the process and criteria outlined a suitable means of deciding whether an administrative assignment should be made if this is not possible?

Q3. Public sector demand: We would also welcome input into this consultation on likely future demand in the public sector and fixed links areas we have covered in this document.

Digital broadcasting has enabled not only the delivery of the traditionally analogue television and radio services much more efficiently, but it has also enabled broadcasters to enrich those services with related data services. Consumers have gained added value and control over the content they access, manufacturers have added features to receivers which would have been impossible or impractical with analogue broadcasting, and broadcasters have been able to make better use of rights held.

Within television production, mics and cameras are becoming increasingly wireless (especially for news coverage and outside broadcasts), including exclusive channels needed for on site/location programme communications (directions for cameramen, presenters or production staff). Consumers are benefiting hugely from the more efficient use broadcasters can now make from their investment in the infrastructure used for such PMSE. In their new digital forms, these are enhancing the functionality and creativity available to producers, transforming the efficiency with which programmes are produced and broadcast, and improving and enriching the viewers' experience. In newsgathering, wireless PMSE makes possible rapid reaction and immediacy which otherwise would not be possible.

A high profile recent example of what consumers and politicians now expect was the London bombings on 7 July. For at least two of the main locations (Tavistock Square and Kings Cross), the BBC news crew needed to cover the rapidly developing story on the other side of Euston Road from the truck, so no cabling was possible. Wireless cameras (at very, very short notice) were the only solution for live coverage, and the situation required immediate access to spectrum. *Ad hoc* purchase of frequencies on the day would simply not have worked as there was no time for the news organisations to spend time clearing access to spectrum and changing their equipment accordingly.

Although thankfully such terrorist acts do not happen frequently, when they do it will not be acceptable for the public's access to immediate, on-the scene outside broadcasts to be limited by prevailing terms of access to spectrum which are inappropriate for covering these events.

Acts of nature, such as last year's floods at Boscastle, can also make similar demands on spectrum. Boscastle involved major usage of radio cameras by the BBC for the National News where, due to the mess during the clear-up,

using trucks and cabling wasn't practical, so the intense UK-wide interest and concern could only be satisfied by means of a radio cam walkaround. There are many outside broadcasts where health and safety concerns sufficiently restrict newsgathering and other programme-making that the availability of suitable spectrum for PMSE is not an option.

Even programme making is becoming more like news, with limited time for set up, recording, editing and broadcasting. In effect, ready access to spectrum has enabled broadcasting to become more efficient and effective.

And as broadcasters respond to changing consumer, manufacturer and retailer expectations in planning for HDTV (which would enable licence payers to extract better value from the increasing amount of BBC programming which our co-production partners require to be produced in high definition), this can only increase demand for spectrum, both for broadcasting and for high definition wireless cams.

In addition to proven demand for Digital Terrestrial Television capacity for SDTV, where there is no spare capacity until digital switchover makes released spectrum available¹, all of this argues for increased demand from broadcasters - both public service and otherwise - for spectrum. But it is far from clear that the market would guarantee access to the necessary spectrum on terms consistent with the objectives and nature of public service broadcasting.

The greatest increase in efficiency in television broadcasting is coming about through the migration to digital, where 6 digital television channels can be broadcast within the same spectrum as a single analogue channel (and 14 frequencies will be released for re-use at switchover). Squeezing in small amounts of data as well has enabled broadcasters to enrich consumers' appreciation of programming with additional programme-related related information. Digital television also permits the broadcasting of audio description, extending the enjoyment of programming to the many consumers with poor sight.

Ongoing broadcaster investment in improved coding and multiplexing equipment is further improving efficiency such that each digital service requires less capacity than previously.

The replacement of MPEG-2 as the transmission standard with MPEG-4 will usher in a further step change in efficiency, although the legacy issue of millions of MPEG-2 receivers in the market will probably initially limit implementation of this new technology to new multiplexes using spectrum released by the withdrawal of analogue television.

¹ Commercial service providers may wish to wait until the completion of switchover to launch UK-wide services in released spectrum, although Ofcom could choose to license such capacity from the start of switchover in 2008, with the resulting new services then able to roll out UK-wide as each region switches over (although potential interference into other regions would have to be considered).

This significant increase in the efficient use of the spectrum used for television has not come about because of AIP or any other financial incentive, it has come about because of a Government objective and obligations placed upon the public service broadcasters by Ofcom to achieve that objective.

Such a “command and control” approach to allocating spectrum is entirely consistent with the expectations and obligations of public service broadcasting, as is the mandation of specific transmission technologies for this spectrum. As both Government and Ofcom see public service broadcasting continuing on a broadly similar basis to today, this surely calls into question the applicability of relying on the market for meeting its spectrum needs.

As with digital television, DAB Digital Radio enables more efficient use of spectrum than its analogue predecessor. However, like FM radio before it, DAB has very limited commercial availability without considerable investment in transmission infrastructure and services by the BBC. Recognising this fact, the Government ensured that the necessary spectrum was assigned to the BBC on a non-market basis. Left to the market DAB - if it existed at all - would not be the success it is today, with UK manufacturers leading the world in receiver technology.

If Government wishes to increase the spectrum efficiency of UK radio, the principal tool should be to encourage industry investment in, and consumer adoption of, DAB, rather than to consider charging for analogue radio use. The principal means of doing that would be for Ofcom to deliver the necessary additional Band III spectrum for DAB, which would enable a wider range of services to be offered locally and nationally, in the forthcoming Regional Radiocommunications Conference.

The increased broadcaster investment in DAB which would follow greater Government support would enable, when there was greater equivalence of DAB and FM coverage, rationalisation of services between the two bands/technologies, where currently there is necessarily simulcasting of national services.

The BBC is also doubtful that market forces alone could provide the immediate, guaranteed access to spectrum needed for PMSE, without which the standards, innovation and immediacy expected by UK consumers from today’s programmes, especially news coverage of major events of public interest, could not be delivered.

The BBC agrees with the consultation that affordability and certainty of access to suitable spectrum are barriers to public service broadcasters relying on the market. In the case of the BBC, additional funds for spectrum acquisition would either have to be diverted from investment in programming or found from increases in the licence fee (neither option likely to be popular with consumers and politicians).

Affordability and certainty also apply as barriers to ITN, which provides the news for public service broadcasters ITV and Channel 4, and also to Sky News which, in addition to providing the news for public service broadcaster five, also operates a highly respected and innovative 24/7 news channel which, reflecting the realities of that market, is unlikely to be a major source of profit for its parent.

Q7. Effectiveness of AIP:

- *Do you agree that AIP should remain a primary mechanism for achieving efficient use of public sector spectrum?*
- *Do you think there is merit in these or other alternative mechanisms to achieve efficient use of public sector spectrum, in addition to or instead of AIP?*
- *How is this affected by Ofcom's proposals to move to greater market management of the spectrum?*

While the BBC agrees in principle that Administered Incentive Pricing (AIP) is an appropriate tool for incentivising efficient use of public sector spectrum holdings, its practical applicability to public service broadcasting is limited.

As we have said in our introduction, broadcasting has long been assigned public policy objectives and the delivery of social benefits and its use of spectrum may not be as flexible as alternative uses.

In addition, there are several aspects of the use of spectrum by broadcasters which mean that applying AIP to it would neither be straightforward nor would it necessarily achieve the intended objective.

The fact that the last 700 terrestrial television transmitters only increase UK coverage by about one per cent of households is often taken as an indication of an inefficient use of spectrum. In fact, nothing could be further from the truth. Spectrum in Bands IV and V is extensively re-used UK-wide by broadcasters in a "patchwork quilt". Not only has this spectrum not been allocated in a segmented, logical manner - as has happened with radio - but even if the public service broadcasters were free to respond to AIP and withdraw certain frequencies used for television, the limited commercial appeal of the resulting "islands" in which alternative services could be operated (if they caused no discernable interference to remaining television broadcasts) would make estimating the opportunity cost from not doing so far from clear. In addition, the engineering cost of vacating a frequency would be huge and across substantial parts of the country consumers would have to retune their TV sets.

Irrespective of the level at which any AIP of Bands IV and V were set, for the public service broadcasters to release more spectrum at switchover than currently planned would require a reduction in planned coverage to far less than Ofcom's 98.5 per cent household target. This is unlikely, not just for political reasons, but also because, even with the availability of those same

public services on satellite (and potentially on broadband), digital terrestrial television would still be required to meet Ofcom's coverage target. Consequently, for the spectrum required to meet that target, the public service broadcasters exhibit perfectly inelastic demand.

The conclusion made in the consultation that if public bodies pay market rates for other inputs then they should do so for spectrum is not directly applicable to broadcasting. Unlike an input such as electricity, which is a uniform product available from many competing providers, or rent, where alternative properties would usually constitute demand substitutes, there is only one source of spectrum and its physical characteristics, international harmonisation and a lack of spectrum agility (often linked to resistance to incoming interference) in existing equipment limit the ability of broadcasters (and, for PMSE, commercial equipment hire companies) to be allocated alternative spectrum if they cannot afford to auction price match alternative users for the spectrum requested.

An example is spectrum in the 2.6 GHz band, currently used for digital wireless cams, where the proposal is that this spectrum be allocated to meet anticipated demand from 3G. If that demand arose², broadcasters would be unlikely to be able to match the auction price.

Although Ofcom has offered spectrum at 2.1 GHz as an alternative for digital wireless cams, this is not a suitable substitute as it would provide insufficient spectrum to share amongst the broadcasters to enable replication of the current wireless cam usage within the 2.6 GHz band while also retaining live helicopter links at 2.1 GHz (as increasingly used by the BBC and Sky News) where those links necessarily operate over a wide area, ensuring that the frequencies used cannot also be used for ground-based wireless cams over the whole of that area. It would not benefit consumers or, for events of national importance, satisfy political expectations, to have to revert to non-live helicopter reporting, where footage was brought back to the ground on tape. In addition, the spectrum offered at 2.1 GHz is prone to interference, some (ironically) from 3G in the middle of the band.

When considering the applicability of AIP to broadcasting, Ofcom also needs to consider how community television and radio (subject of considerable political support) would be affected.

Q10. Would the existence of a third party intermediary to facilitate sharing between public sector organisations and other public/commercial bodies be likely to increase the possibilities afforded by sharing? What roles should such a body have? Would individual users find it useful to be able to

² We note that the Analysys Mason *Study on spectrum demand for non-government services* of 1 September 2005 states that "it is currently difficult to gauge the take-up of 3G ... as a result, there is a large amount of uncertainty about future traffic and spectrum demand". Yet it is currently proposed that the proven demand for wireless radio cam use of 2.6 GHz should be cleared from end-2006, principally for anticipated 3G use.

negotiate over sharing/trading arrangements either directly with the MoD or organisation acting on their behalf?

The BBC supports sharing of spectrum assignments where practical. A good broadcasting example is the “borrowing” of spectrum in the 430-450 MHz MOD band facilitated by JFMG to service the large demands by PMSE for spectrum at major sporting events and ceremonial occasions.

Digital switchover will release 14 frequencies in Bands IV and V for re-use where international co-ordination requires that any non-broadcast uses of this released spectrum must not cause any more interference to existing television use of those bands than a broadcast use would.

PMSE already shares Bands IV and V with television broadcasting and with radar (UHF Channel 36) and radio astronomy (Channel 38), where it is hard to envisage alternative uses which could take advantage of such opportunities for sharing this spectrum and cause no more interference. The BBC very much supports the role undertaken by JFMG, as highlighted in the consultation, and is concerned that it is proposed JFMG be replaced with alternative intermediaries which will not be responsive to the needs of PMSE.

Newsgathering, which is neither inherently profitable nor predictable, needs an ongoing assignment of suitable spectrum. Without that immediacy, response by news organisations to events like the London bombings will not be possible to the same high standard, the standard expected by consumers and politicians.

For regional newsgathering and programme-making, which is the subject of increasing political emphasis including within the review of the BBC's Royal Charter (where the BBC's commitment to regionality and diversity is championed), there is a need for access to spectrum for PMSE across large areas.