

ITU Workshop on Market Mechanisms for Spectrum Management – January 2007

Global Challenges to Spectrum Access – Civil/Military Spectrum

Jeremy Cain, Policy Manager, Ofcom

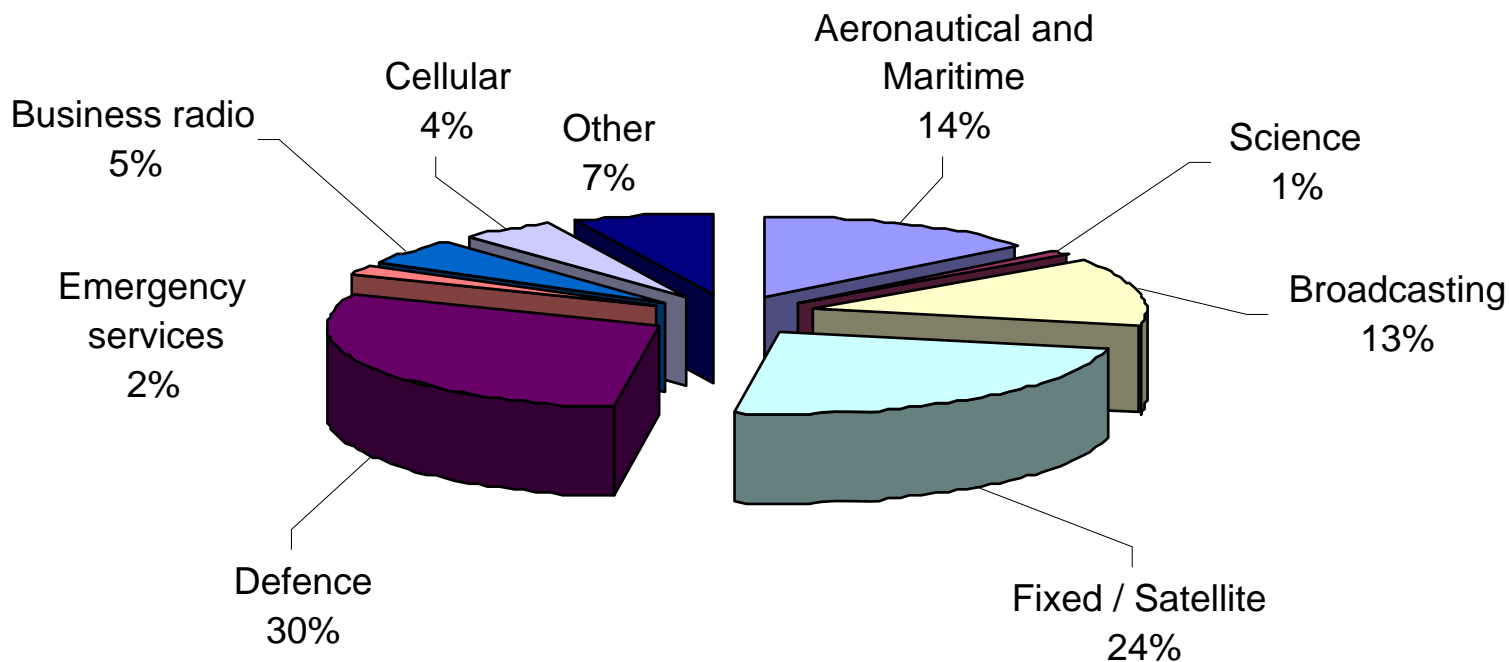
Speaking for:

Mike Goddard, Director, Spectrum and International Policy Ofcom UK

A global issue?

- **When presenting details of the UK's approach to spectrum management, one issue that attracts almost universal interest is the interaction between the civil spectrum regulator (Ofcom) and defence spectrum management in government (Ministry of Defence – MoD)**
- **Most countries are faced with national allocation tables that have not changed substantially for decades**
- **However the demand for spectrum for new services has risen dramatically and the balance between different uses is changing rapidly**
- **This presentation describes the UK's approach to this problem – some of the issues have international implications and all could be of interest to other administrations**

Distribution of spectrum in the UK (below 60 GHz – weighted)



Ofcom's Spectrum Functions

- **Manages nearly all the civil spectrum**
- **Licenses users under the Wireless Telegraphy Act**
- **Represents the UK (all spectrum users including defence) in international fora (even though it is an “independent regulator” and not part of the government within the UK)**

A strong relationship between the civil regulator and the MoD has been built up over many years and has been carried forward into Ofcom

Ofcom's Spectrum Management Duties

To secure the **optimal use of the spectrum**, having regard to the different needs and interests of all users

In carrying out its spectrum management duties, Ofcom must have particular regard to:

- **Availability of spectrum**
- **Current and future demand for spectrum**

And to the need to promote:

- **Efficient management and use of the spectrum**
- **Economic and other benefits arising from its use**
- **Development of innovative services**
- **Competition in electronic communications services**

Why change the approach to spectrum management?

- **Spectrum contributes £billions pa to the economy – several % of GDP**
- **Importance is increasing – more and more competing users**
- **Excessive and poorly justified intervention can hold back competition and innovation – traditional mainly technical approach sometimes guilty of this**
- **Hence need to facilitate more rapid access to spectrum, increase flexibility, and release spectrum value**

Ofcom's Spectrum Management Objectives will best be met by:

- **Allowing spectrum to flow to its most valuable use**
- **Maximising opportunities for innovation, by minimising impediments**
- **Ensuring that spectrum is in market, not the regulator**

Specific Policies

Ofcom's Direction of Travel will be realised by a number of specific policies

Spectrum Trading

Spectrum Liberalisation

Licence Exemption

Deregulation

Releasing Spectrum

These policies would result in significant disengagement from regulation

The Ofcom Spectrum Vision

- Spectrum should be free of technology, policy and usage constraints as far as possible
- It should be simple and transparent for licence holders to change the ownership and use of spectrum
- Rights of spectrum users should be clearly defined and users should feel comfortable that they will not be changed without good cause

The Ofcom Spectrum Vision - Implementation

- Existing licences tradable
- Spectrum awards – at least 400 MHz of prime spectrum newly available in next few years (<3GHz) all technology and application neutral to the maximum extent possible and tradable
- More deregulation - licence exemption, lifetime licences, private-sector band managers

And extending market principles to public sector – a policy fully endorsed by the UK Government

Extending market principles to Public Sector spectrum - Independent Audit of Spectrum Holdings

- Established by UK Government (Treasury) at end of 2004 - led by Prof Martin Cave
- Supported by The Treasury and Ofcom
- Report published December 2005; Government (and Ofcom) response published March 2006; update report published December 2006
- Builds on increasing acceptance of principles and earlier introduction of pricing for defence spectrum, and substantial previous releases of spectrum from exclusive defence use to mainly shared use (over 250 MHz below 3 GHz and over 1000 MHz between 3 and 10 GHz)

Independent Audit of Spectrum Holdings - Background

- Major expansion of market forces to commercial spectrum management
- Significant amounts of spectrum held by public sector
- Many allocations unchanged for decades – in contrast to dynamic environment and rapid growth in commercial sector
- Broad reviews of other government assets (e.g. land)

Audit recommendations

Subject public sector spectrum to market forces:

- Extend application of spectrum pricing for defence and to aeronautical and maritime applications in coming years
- Encourage public sector users to open up spectrum to other users (through trading or release) and allow them to keep the income
- Consider new sharing techniques including feasibility in previously no-go areas (such as aeronautical radar) – see later
- Define usage rights and sharing (especially civil/military) arrangements more clearly through quasi-licences for military users
- Meet new public sector requirements through spectrum market – exceptions subject to strict criteria
- More emphasis on forward planning – develop public sector spectrum strategy
- Band-specific audit has identified opportunities for action

Implementation (as at end 2006)

- Recommendations generally endorsed by Government and Ofcom
- Mechanism for specifying government spectrum user rights established
- Priority bands for release or sharing identified
- Government agreement that new spectrum requirements will be met through the market
- Study undertaken to support application of spectrum pricing to aeronautical and maritime bands (especially radar)
- Trials of sharing between civil communications and aeronautical and maritime radars initiated with significant private-sector and government support

Continuing programme of implementation in coming years

UK Bandsharing initiative: 2006-07

- **A joint civil-military aeronautical and maritime initiative to explore bandsharing opportunities:**
 - **Interference testing**
 - **Defining theoretical safety criteria**
 - **Testing the criteria and mitigation techniques**

Military interference and mitigation trials (Scotland May 07 - TBC)

Civil maritime radar interference field trials (Oban Scotland November 06)

Civil aeronautical field trials (options for 2007 under consideration)

Land and coastal range based interference tests (March-July 06)



Conclusion

- **The UK's approach to spectrum management is changing fast**
- **It has to in order to release the huge potential value of the spectrum**
- **Opening up large tracts of spectrum that have remained unchanged for decades is part of the programme**
- **The new approach of making spectrum available on a technology and application neutral basis has already been agreed in principle at European Union level**
- **The implications at the ITU level need to be addressed – sharing possibilities and a more flexible approach to allocations**

Thank You

Details of all Ofcom's policies, consultation documents, etc at:

www.ofcom.org.uk

Independent Review of Public Sector Spectrum at:

<http://www.spectrumentaudit.org.uk/>

Jeremy.cain@ofcom.org.uk or
mike.goddard@ofcom.org.uk