

# The SFR: Implementation Plan Principles & Objectives

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## Objectives

To address two important areas of implementation for Ofcom's Spectrum Vision

- Release of spectrum into the market over the next few years
- Transition to spectrum trading and liberalisation in relation to mobile services

Various other implementation issues were outside scope, eg:

- Technology-neutral spectrum usage rights
- Power levels for licence-exempt use in rural areas

## More fundamentally...

To help to deliver on our ambition for the UK, as a world leader in wireless communications, by promoting:

- More effective use of spectrum
- Greater certainty for the market
- Reducing barriers to entry and promoting competition

It is explicitly not an objective to release spectrum in order to raise revenue - this does not feature in our statutory duties.

## Scope

Ofcom undertook a trawl in 2004 of all spectrum holdings to identify under-used spectrum that we expect to become available:

- approx 15 bands identified, of which 12 have provisional dates identified in SFR:IP, by end-2008
- 3 other bands (digital switchover ‘dividend’, 3.6-4.2GHz, Band III)

SFR:IP sets out:

- Proposals on our *general approach* to releasing spectrum into the market
- Specific proposals for the *programme* of releases and for *individual bands*

## General approach (1)

Our objective is to make spectrum available for use by the market, with the minimum constraints necessary, and as soon as reasonably practicable.

- The market is generally better placed to judge the optimum use of the spectrum than the regulator
- Spectrum trading and liberalisation facilitate greater flexibility, and reduce need for prescriptive regulation

Historically regulators have tended to take a different approach – identify the “optimum use” and delay availability until demand for that use appears.

We consider this risks excessive intervention and artificially reduced supply, with adverse effects on competition and efficient use of spectrum.

## General approach (2)

In general, market mechanisms also likely to be more efficient as a mechanism for assigning spectrum, ie more likely to get spectrum quickly to person who can make most efficient use of it.

Alternatives to auctions:

- First come, first served – fails to address excess demand
- Beauty contest – subjective judgments

Auctions generally superior as (1) yield more reliable information about most efficient user (2) more robust and transparent process

Caveats – need to consider licence-exempt use *before* any licensing. Also, exceptionally, policy considerations may also justify more intervention.

## General approach (3)

Market-based approach does not absolve regulator from work!

Obligations to promote most efficient use of spectrum, to promote competition, and other duties. These require:

- an understanding of likely potential uses of any particular band
- so that we can design *packaging* of spectrum and *award process* to facilitate efficient use – not to mandate a particular use

But some proposals in SFR:IP for simplifying process compared to past, eg:

- possible scope for simpler auction process (SMRA used in all 3 UK auctions to date); also proposal on licence *term*

## Programme (1)

Several criteria to be balanced in designing programme, viz:

- Economic significance of spectrum
- Market interest
- Time required for preparation
- EU and international environment
- Potential substitutability of bands
- Ofcom's resources

All dates indicative only.

## Programme (2)

<b>2005-06</b>		
410-415 MHz/420-425 MHz	Ex-Inquam	2x4 MHz
872-876 MHz/917-921 MHz	Ex-Inquam	2x4 MHz
1781-1785 MHz/1876-1880 MHz	DECT guard bands	2x3.3 MHz
2010-2025 MHz	Licence-exempt 3G TDD band	15 MHz
2290-2302 MHz	Ex-MoD, possibly paired with 2010MHz	12 MHz
28 GHz	Some licences available	2x112 MHz
40 GHz	May not be via auction	2x250MHz
<b>2006-07</b>		
2500-2690 MHz	Expansion band	190 MHz
1452 -1492 MHz	L-Band	40 MHz
10 GHz		2x100 MHz
32 GHz		2x500 MHz
<b>2007-08</b>		
1790-1798 MHz	Possible awards in GB and all-Ireland	8 MHz

## Opportunities - 1

- DECT guard bands
  - Only 3.3 MHz of spectrum – but most of the 60m UK mobile phones can tune to it
  - Opportunities for low-power GSM services – eg private GSM services for offices or campuses
- 410-415 MHz/420-425 MHz
  - 2x4MHz in MoD managed band
  - Released due to insolvency of previous licensee
  - Possible uses include: business radio, programme making, emergency services. Potential for band management.
- 872-876 MHz/917-921 MHz
  - 2x4MHz
  - Use may be constrained to avoid undue interference to adjoining GSM users
  - Possible low-power applications.

## Opportunities - 2

- 2500-2690 MHz
  - 190 MHz of spectrum in the most popular band for mobile applications
  - Compare 3G auction of 2000 (140 MHz); digital switchover dividend (112 MHz)
  - Earmarked for expansion in mobile communications in all European countries
  - Vacant in UK from 1 January 2007
  - Ofcom would like to make it available on a technology neutral basis, but consistent with a UMTS band plan and emission mask
  - Highly suitable for further 3G capacity; or to support further innovation beyond 3G
- L-Band
  - 40 MHz of spectrum. Co-ordination with neighbouring countries agreed at Maastricht 2002, on basis of DAB plan.
  - Potential for mobile multimedia, including TV to mobile phones
  - Technology neutrality would allow DVB-H, DMB, MediaFLO or other technologies to use this capacity

## Opportunities - 3

- 2010 and 2290 MHz
  - 15 and 12 MHz in bands suitable for mobile applications
  - Potential for new mobile communications technologies, eg WiMAX
  - 2010 band was held back (subject to market demand) for licence-exempt, self-provide 3G TDD applications. These have not emerged
  - 2290 band recently released to Ofcom by MoD
  - Possible simultaneous award of the two bands through a process which does not pre-suppose pairing
- 1790-1798 MHz and 2302-2310 MHz
  - 8 MHz and 8 MHz – pairing will be possible but not mandatory
  - Emergency service users have plans for relocation: Ofcom plan to award in 2007/8
  - All-Ireland award may be possible earlier
  - Possible uses include: wireless broadband applications
- Higher frequencies:
  - Large amounts of spectrum at 10, 28, 32 GHz, suitable for fixed point-to-point or point-to-multipoint applications (fixed links, fixed wireless access, outside broadcast video links). 40 GHz –consider licensing in way that allows operator experimentation

## Other sources of spectrum

- Digital Switchover
  - 112 MHz of spectrum expected to be freed up by the transition from analogue to digital TV
  - The Regional Radio Conference of the ITU is currently discussing an international plan for broadcasting spectrum – conclusion in mid-2006
- Other bands: 3.6-4.2GHz and Band III.
- Cave Review of public sector spectrum holdings
  - Prof Martin Cave commissioned by the Government to review public sector holdings of spectrum, with a view to making more available for the civil market
  - Expected to address longer-term issues
  - Report expected towards end 2005

## Transition issues

- European harmonisation
  - Harmonisation measures apply to certain bands
  - Work within European forums to ensure that bands are available for award on a technology and application neutral basis
- Extending trading and liberalisation to existing 2G and 3G spectrum
  - There may be special circumstances around liberalising 2G spectrum
  - Ofcom is undertaking detailed analysis about the likely impacts of liberalisation and different methods of implementing it, in parallel with the public consultation.
- Liberalisation to allow 3G services in other bands
  - SFR:IP also considers whether there should be any restrictions on ability to use bands not presently designated for 3G services

# Conclusions

Q&A?