

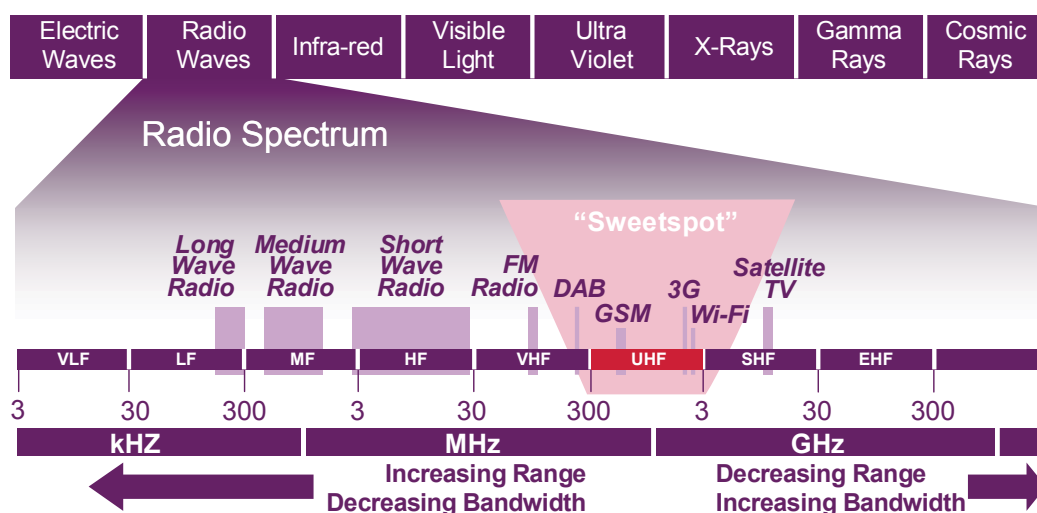
Future spectrum awards

Spectrum available and possible uses

1. Ofcom is planning on releasing several pieces of spectrum in the next few years. The planned releases are:
 - (a) L-Band spectrum (around 1.5 GHz);
 - (b) spectrum around 2.6 GHz; and
 - (c) the Digital Dividend Review (DDR)—which currently groups three subsets:
 - (i) cleared spectrum resulting from DSO (totalling 112 MHz);
 - (ii) channels 36 and 69; and
 - (iii) interleaved spectrum.
2. All these pieces of spectrum are considered to be quite valuable as they fall within the ‘sweet spot’ where the spectrum is able to carry a large amount of information, but also propagates over a long range.

FIGURE 1

Radio spectrum



Source: Ofcom.

Note: The horizontal scale is a non-linear logarithmic scale.

3. Ofcom has stated publicly that it intends to auction all the spectrum on a ‘technology neutral’ basis.

Timing of the auctions

4. Ofcom has indicated the following timings for these spectrum releases:

- L-Band: early 2008;
- 2.6 GHz and related bands: mid-2008; and
- digital dividend.

5. Ofcom has also indicated the following most likely uses for these spectrum bands:

TABLE 1 Most likely uses of the available spectrum

	← Digital dividend → 120 MHz	← L-Band → 40 MHz	← 2.6 GHz → 215 MHz
DTT/HDTV	✓		
WiMAX	✓	✓	✓
Mobile television	✓	✓	✓
Mobile, voice and data	✓		✓
MHz	470	862	1452
			1492
			2500
			2690

Source: Ofcom.

Ofcom's award of L-Band spectrum

Overview

6. 40 MHz of spectrum will be made available in the 1452–1492 MHz band (L-Band). Ofcom has previously consulted on the release of this spectrum and the consultation period closed on 12 September 2007.

Possible uses

7. Possible uses of the spectrum include:
- mobile multimedia including mobile television; and
 - wireless broadband, for example WiMAX.

Ofcom's award of spectrum around 2.6 GHz

Overview

8. In 2008 Ofcom intends to release around 205 MHz of spectrum. Most of the spectrum is in the 2500–2690 MHz (2.6 GHz) band with some around 2020 MHz.
9. Ofcom has conducted several rounds of consultation on the proposed spectrum release since December 2006 and issued its latest consultation document on 19 December 2007. Responses to this consultation were due by 1 February 2008 and it is intended that the auction will occur in summer 2008.

Possible uses

10. Ofcom's research has identified a number of potential uses of the spectrum. They include:
- wireless broadband services, such as WiMAX;

- mobile multimedia services, such as mobile television;
- advanced mobile services using technologies such as 3G and its evolutions; and
- programme making and special events (PMSE).

Digital Dividend Review

Overview

- In addition to the spectrum released from DSO, Ofcom has considered in the DDR two further blocks of spectrum. Including these two blocks, there is a total of 128 MHz of spectrum in the UK. In this way, the DDR groups together three pieces of spectrum, each with characteristics that may suit different uses:
 - cleared spectrum resulting from DSO;
 - Channels 36 and 69; and
 - interleaved spectrum.
- Throughout Europe, the UHF band is divided into channels of 8 MHz each, with the part for television broadcasting ranging from Channel 21 at the bottom to Channel 69 at the top—or 470 to 862 MHz.

FIGURE 2

DSO release of UHF spectrum

Today

21	22	23	24	25	26	27
28	29	30	31	32	33	34
35	36	37	38	39	40	41
42	43	44	45	46	47	48
49	50	51	52	53	54	55
56	57	58	59	60	61	62
63	64	65	66	67	68	69

	Spectrum for analogue TV and 6 DTT multiplexes
	Currently non-broadcast use

Post-DSO

21	22	23	24	25	26	27
28	29	30	31	32	33	34
35	36	37	38	39	40	41
42	43	44	45	46	47	48
49	50	51	52	53	54	55
56	57	58	59	60	61	62
63	64	65	66	67	68	69

	Spectrum for 6 DSO multiplexes
	Spectrum released by DSO
	Currently non-broadcast use

Source: Arqiva.

Channels 36 and 69

- Channel 36 is currently used for radar at one airport, and Channel 69 is used mainly for wireless microphones in PMSE.

14. Channel 69 will be retained for PMSE purposes. Channel 36 will be auctioned at the same time as the remainder of the DDR.

Possible uses

15. Channel 36 could support a single frequency network across the whole of the UK. This is the only piece of DDR spectrum available immediately across the UK. For this reason Channel 36 is seen as being particularly attractive to parties.
16. Possible uses include:
 - mobile broadband;
 - advanced mobile services using technologies such as 3G and its evolutions;
 - PMSE;
 - mobile television; and
 - an additional DTT multiplex—running on a single frequency.
17. Because of the characteristics of the spectrum it appears that the most likely use of Channel 36 would be for mobile television or an additional DTT multiplex.

Digital Dividend Review—interleaved spectrum

18. Interleaved spectrum is the additional capacity that is available in limited geographical areas within the spectrum carrying the planned high-power DTT. It is effectively unused spectrum (or ‘white space’) that exists in particular areas. Some parts of the interleaved spectrum are currently used for PMSE—such as wireless microphones.

Possible uses

19. Ofcom has said that this will be packaged for continued use in PMSE as well as for sub-national television broadcasting. Ofcom proposes to offer the interleaved spectrum as:
 - 25 or more packages suitable for sub-national television; and
 - a UK-wide package of interleaved spectrum.

Digital Dividend Review—cleared spectrum

20. The cleared spectrum will start to become available once DSO is completed in each area. However, whilst spectrum covering a significant portion of the UK, including some large population centres, will become available from 2009, completion of DSO will restrict nationwide availability until 2012.
21. Ofcom will auction packages of spectrum in a way that enables the widest possible range of uses, including additional DTT multiplexes as well as new mobile services.

Possible uses

22. Possible uses of the spectrum include:

- additional DTT multiplexes;
- wireless broadband such as WiMAX;
- mobile television; and
- advanced mobile services using technologies such as 3G and its evolutions.