

# ENABLING UK GROWTH: RELEASING PUBLIC SPECTRUM

## UPDATE ON PROGRESS – DECEMBER 2011

### Introduction

The Spending Review in October 2010 announced that *“at least 500MHz of public sector spectrum below 5GHz will be released over the next 10 years for new mobile communication uses, including mobile broadband.”*<sup>1</sup>

In March 2011 we published *“Enabling UK growth – Releasing public spectrum: Making 500MHz of spectrum available by 2020”*<sup>2</sup>. This laid out our initial view on how we would deliver this and invited comments in a call for evidence. From a list of 15 bands set out in March, we have now identified the bands from which approximately 470MHz of the 500MHz can potentially be sourced.

This document provides an update on progress with this work.

### Response to call for evidence

We received a good response to the call for evidence, with most respondents welcoming the initiative to make available publicly held spectrum. We received 30 non-confidential replies and 1 confidential reply. The non-confidential replies can be found on the DCMS website<sup>3</sup>.

A number of themes emerged from the responses:

- Most respondents identified spectrum suitable for public mobile communications as a priority. However, Mobile Network Operators (MNOs) stressed the importance of harmonised spectrum which they valued more highly than spectrum which had not yet been harmonised. They urged the UK to take a lead in international work to co-ordinate identification of new bands.
- For public mobile communications wider bandwidths are required and fragmented releases less desirable.
- Timing of release is important, so that spectrum is released when it can be put to most efficient use.
- Aside from MNOs, many other users indicated a growing demand for spectrum. In many cases the quantity required was not substantial (<10MHz) and users were also keen to explore additional shared use of spectrum or interim uses pending full harmonisation of bands.
- Many respondents stressed the need to consider the impact of reallocation of spectrum on existing users.
- Users would like to understand the process for accessing public spectrum, including points of contact and visibility of upcoming releases.

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<sup>1</sup> [http://cdn.hm-treasury.gov.uk/sr2010\\_completereport.pdf](http://cdn.hm-treasury.gov.uk/sr2010_completereport.pdf)

<sup>2</sup> <http://www.culture.gov.uk/publications/7994.aspx>

<sup>3</sup> <http://www.culture.gov.uk/consultations/8297.aspx>

We have taken account of these views in formulating our approach to releasing the 500MHz.

### Releasing the 500MHz

Since the call for evidence was published in March, the Central Spectrum Release Group led by Shareholder Executive has carried out further work in preparing the ground for releasing public sector spectrum and developing a workplan for achieving the 500MHz target. A substantial proportion of this work has fallen to the MOD, CAA and NPIA. The MOD and the CAA have already done an initial review of their spectrum and have focussed their attention in recent months on looking in more detail at the possibilities in those specific bands that seem most likely to be able to release valuable spectrum. On the basis of this work we have further refined the initial list of 15 bands identified and prioritised the bands which have the best potential for achieving the 500MHz target and satisfy demand as outlined in table 1 below.

**Table 1: Potential spectrum releases currently being examined**

Source of release	Potential bands Identified	Potential release	Timing
MOD Priority releases & other short term opportunities	2.3 GHz-2.4 GHz	200MHz	160MHz by 2016 & remaining 40MHz by 2020
	3.4 GHz-3.6 GHz		
	870-72 & 915-17 MHz	4MHz	By 2016
MOD & ES Sharing Opportunities	Number of bands	80-120MHz	Currently exploring
Longer term releases	2.7 GHz-3.1 GHz	Up to 100MHz	2016 onwards. Dependant on further studies and future developments
	4.4 GHz-5.0 GHz	50MHz	
<b>Total potential</b>		<b>Up to 474MHz</b>	
Other bands to be explored further	Number of bands below 5GHz (incl. 4.2-4.4GHz and 2.9-3.4GHz)		Dependant on future developments
	5.0 GHz-6.0 GHz (outside current target)		

Spectrum with clear commercial applications and value, such as public mobile, where demand is highest and can contribute the greatest value to the economy has been prioritised for release:

- Action is underway by the MOD to free 160MHz from 2.3 GHz-2.4 GHz and 3.4 GHz-3.6 GHz bands which have been identified for public mobile use by the end of 2016. A further 40MHz from the above bands could to be release by 2020.

- The MOD has also identified 3500 MHz–3580 MHz for short term sharing opportunities from 7 Nov 2011, which along with some spectrum from between 3410 MHz–3480 MHz, is due to be released in 2015/2016<sup>4</sup>. Additional spectrum at 3410 MHz–3480 MHz may become available for sharing in 2012/13. No licences granted for shared use will be extended beyond December 2015, to allow for a release of the bands in 2015/16.

We will also look to satisfy demand from other users such as PMR, PMSE and machine to machine uses in short to medium term. To this end up to 120MHz will be made available for sharing on a temporal or geographic basis:

- The MOD have identified a range of bands below 5 GHz (870-72MHz/915-917MHz, 1427 MHz-1452 MHz, 2025-MHz-2070 MHz and 4800 MHz-4900 MHz) where spectrum could potentially be shared with other users and can start to be available in the short/medium term.
- In addition there is up to 36MHz of spectrum held by the Home Office which may be suitable for sharing or release. The above will be explored further during the course of next year as HO continues to access the future demand from emergency services.

Finally, we are examining the feasibility of releasing up to 150MHz of spectrum in the longer term from two other bands: 2.7 GHz-3.1 GHz and 4.4 GHz-5.0 GHz. These bands are not yet harmonised for public mobile communications, but may have valuable uses in the longer term. We recognise that demand for spectrum is likely to change over time with developments in technology and the advent of new business models, so we will remain flexible in our approach and endeavour to be responsive to future demand.

A holistic approach to spectrum release is important: this initiative should be aligned with initiatives and releases in the commercial sector, prioritising bands for international harmonisation, managing demand and promoting efficient use.

### **Next steps**

Work will continue to prepare the 2.3 GHz-2.4 GHz and 3.4 GHz-3.6 GHz bands for release and to carry out a detailed feasibility for potential releases in the 2.7 GHz-3.1 GHz band. The MOD is also currently exploring opportunities for short term sharing within the 3500 MHz-3580 MHz band and is seeking to assess the demand for additional bands identified as part of the release program.

The Shareholder Executive, working with DCMS and Ofcom, will shortly be undertaking further work to get a better understanding of the likely future demand for spectrum and the potential benefit to the economy. In preparing for longer term releases we will ensure that the work of this programme in the public sector is aligned with other initiatives, particularly in the area of international harmonisation. Below is an outline of the activities currently underway.

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<sup>4</sup><http://www.mod.uk/DefenceInternet/AboutDefence/WhatWeDo/ScienceandTechnology/Spectrum/SharingDefenceSpectrum.htm>

We plan to provide further updates on the progress of the above activities on an ongoing basis as decisions are taken around specific bands. We currently envisage a further update on the overall program of works following WRC-12, to reflect on any decisions taken during the upcoming months.

**Table 2: Summary workplan to 2020**

Activities		2011/12	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21
Priority bands	Preparation works and release of 2.3-2.4GHz	■	■	■	■	■					
	Preparation works and release of 3.4-3.6 GHz	■	■	■	■	■					
	Release plan for 870-872 MHz with 915-917 MHz <sup>(1)</sup>	■	■	■	■	■					
Sharing bands	Explore sharing opportunities	■	■								
Other bands	Feasibility studies for 2.7-3.1 GHz	■	■	■							
	Feasibility studies for 4.4-5.0 GHz			■	■						
	Decisions in relation to the above bands				■	■					
	Ongoing reassessment on bands currently being held off	■	■	■	■	■	■	■	■	■	■
Other activities	Study of the economic benefits of spectrum	■	◆								
	Ongoing collaboration across departments & Ofcom	■	■	■	■	■	■	■	■	■	■
	International co-ordination	■	■	■	■	■	■	■	■	■	■
	Examine options for further efficiencies	■	■	■	■	■	■	■	■	■	■
International activities	WRC	◆				◆				◆	
	RSPP	■	◆	■	■	■	■				
	Track international developments	■	■	■	■	■	■	■	■	■	■

**Legend:**

— Ongoing works

◆ Latest estimate on timing