



Release of 2010-2025 MHz

Statement

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Section 1

Executive summary

- 1.1 This statement presents our conclusions to date following our consultation of 10 May 2010 (the May consultation)¹ on the best way to release the spectrum at 2010-2025 MHz (the 2010 MHz band) for use. The spectrum is currently unused in the UK.
- 1.2 In the May consultation we sought views on the following.
 - If wireless cameras were the only source of demand for the band, its optimal use in the short term would be secured by allocating it to Programme Making and Special Events (PMSE).
 - If there were other sources of demand for the band, we would decide the best way to release it in the light of all the information available to us.
 - Meanwhile, we would allow temporary use by wireless cameras.
 - We would make the band available for use for wireless cameras during the London 2012 Olympic Games and Paralympic Games in specific locations.
- 1.3 We received 7 non-confidential and 3 confidential responses. Some stakeholders confirmed demand for the band for wireless cameras and argued in favour of its allocation to PMSE but others produced evidence of demand for mobile broadband services, and argued implicitly or explicitly in favour of a competitive award. Evidence of demand for mobile services has also come from the German spectrum auction in May 2010, in which the 2010 MHz band was acquired for €5.7m. There was little support for making the band available on a licence-exempt basis.
- 1.4 These factors suggest that the opportunity cost associated with reserving the band for PMSE would be greater than we had supposed. Consequently, in line with our general approach to spectrum management, we now consider that it possible that it would be more beneficial to release the spectrum through a competitive award. The details of this award will be the subject of a future consultation.
- 1.5 There was broad agreement to our proposals for allowing temporary use of the band for PMSE pending a competitive award and to making the band available for the London 2012 Olympic Games and Paralympic Games and we have therefore confirmed these proposals.
- 1.6 We will consult further on a detailed award process as soon as practicable. The earliest feasible date for an award of the 2010 MHz band is around 12 months from now, that is in Q1 2012. However, depending on the prioritisation of this work relative to our other spectrum management activities, the award may in practice take place later.
- 1.7 In the meantime, licences to access 2010-2025 MHz for PMSE use can now be obtained from JFMG². This access is on the same terms and conditions, including price, as other spectrum used by PMSE in the 2 GHz band.

¹ http://stakeholders.ofcom.org.uk/consultations/release_2010_2025/

² www.jfmg.co.uk or 020 7299 8660

Section 2

Background to our proposals to award the 2010 MHz band

Introduction

- 2.1 This section sets out the background to the May consultation on the best way to release spectrum in the 2010 MHz band and recaps the proposals on which we consulted.

The 2010 MHz band

- 2.2 The band is allocated on a primary basis to the fixed and mobile services in the UK and intended for use on a worldwide basis by administrations for IMT-2000 advanced mobile telephony services including internet access and other high data rate applications³. See annex 1 for further details. It is currently unused in the UK and lightly used, if at all, overseas.

Previous consultations

- 2.3 As detailed in our May consultation, we have previously consulted a number of times about awarding the band. Previous market research indicated its potential uses were advanced mobile services, broadband wireless services, mobile multimedia services and programme-making and special events (PMSE) although responses to our earlier consultations suggested there was limited demand for the band other than for PMSE, specifically wireless cameras. We had intended to award the 2010 MHz band alongside the 2.6 GHz band⁴ as it was considered a potential substitute or complement for delivery of mobile broadband services.
- 2.4 Litigation by two mobile network operators (MNOs) in 2008 delayed that award. Fourteen months into the litigation process, and as momentum was growing in Europe for mobile use of the 790-862 MHz band (the 800 MHz band), the previous Government published wide-ranging proposals to modernise the UK's digital economy⁵. These included a spectrum modernisation plan, under which it was proposed that we hold a combined auction of the 800 MHz and 2.6 GHz bands and spectrum that the mobile network operators (MNOs) might relinquish. In light of the previous Government's plan for a combined 800 MHz and 2.6 GHz award, we withdrew our original decision to award the 2.6 GHz band (along with the 2010 MHz band) as it did not include the 800 MHz band.
- 2.5 There is a more detailed account of previous consultations in section 3 of the May consultation⁶.

³ More widely known as '3G' or '3rd Generation' services

⁴ See http://stakeholders.ofcom.org.uk/spectrum/spectrum-awards/awards-in-preparation/award_2010/ for documents relating to the preparation of the 2.6 GHz auction

⁵ <http://webarchive.nationalarchives.gov.uk/20100511084737/interactive.bis.gov.uk/digitalbritain/>

⁶ http://stakeholders.ofcom.org.uk/binaries/consultations/release_2010_2025/summary/20102025.pdf

The May consultation

2.6 We sought views on the proposals summarised below:

- if wireless cameras were the only source of demand for the band, its optimal use in the short term would be secured by allocating it to PMSE;
- if there were other sources of demand for the band, we would decide the best way to release it in the light of all the information available to us. We could licence-exempt it for other uses, hold a competitive award or allocate it to PMSE with fees for access reflecting its opportunity cost;
- until we had made and implemented our decision, we could allow temporary use for wireless cameras; and
- in all circumstances, we believed we should make the band available for use for wireless cameras at the London 2012 Olympic Games and Paralympic Games in specific locations on a temporary basis.

Developments since the May consultation

The German and Swiss mobile spectrum auctions

- 2.7 The German mobile spectrum auction of the 2010 MHz band together with the 800 MHz band, the 2.6 GHz band and other spectrum suitable for mobile use, finished on 20 May 2010. The 2010 MHz band was acquired by Telefónica O2 Germany for €5.7m, equivalent to £4.8m or £0.004 per MHz per head of population at prevailing exchange rates.
- 2.8 Switzerland is planning to auction the 2010 MHz together with other bands suitable for mobile use in H1 2011. It has announced a reserve price for the 2010 MHz band of CHF12.45m (about £8m).

Direction to Ofcom on auctioning the 800 MHz and 2.6 GHz bands

- 2.9 The Secretary of State has directed⁷ Ofcom in relation to a number of matters relating to mobile spectrum, including the holding of a combined auction of spectrum in the 800 MHz and 2.6 GHz bands. The direction does not require us to award the 2010-2025 MHz band as part of the combined auction.

The rest of this document

- 2.10 The following section summarises the responses to the specific questions we asked, presents our emerging conclusions and describes the next steps. Annex 1 gives further information about the 2010 MHz and adjacent bands. Annex 5 of the May consultation summarises the legal and regulatory framework.

⁷ Wireless Telegraphy Act 2006 (Directions to OFCOM) Order 2010
<http://www.legislation.gov.uk/uksi/2010/3024/made>

Section 3

Responses to the May consultation and our conclusions and decisions

Introduction

3.1 We received 7 non-confidential and 3 confidential responses and have placed the former on our website⁸. We have carefully considered the responses and reviewed our proposals in the light of them and of the developments outlined in the previous section. On the basis of these responses and recent developments, this section presents our conclusions and decisions on:

- our approach to releasing this spectrum; and
- temporary access to the spectrum for PMSE use and availability for the London 2012 Olympic and Paralympic Games;
- combining the award with that for 2.6 GHz..

3.2 We will consult further on the award design when we have formulated detailed proposals.

Our approach to releasing the spectrum

Responses on demand for the spectrum

3.3 In the consultation we sought views on following questions:

Question 1: Is there demand to use the band for wireless cameras?

Question 2: Is there demand for other uses of the band?

Question 3: How might demand for the band change in the foreseeable future?

3.4 Two respondents, the BBC and JFMG, confirmed demand for the band for wireless cameras and argued in favour of its allocation to PMSE. However, others gave evidence of other sources of demand for the band, namely fixed links and backhaul for telecommunications and utility networks, mobile and wireless broadband and mobile TV. Those parties argued implicitly or explicitly in favour of awarding the band competitively, especially in the light of European developments on spectrum harmonisation around 2 GHz and growth in demand for mobile data traffic, which is increasing the requirement for spectrum suitable for mobile broadband services.

3.5 Some respondents noted that although the focus for mobile broadband has so far been on other bands in the 1-3 GHz range, the 2010 MHz band could provide a worthwhile incremental increase in bandwidth. They also noted that there are signs of growing international interest in developing mobile equipment to operate in the band,

⁸ The non-confidential responses, from **4RF Communications**, the **BBC**, **BT**, **Ericsson**, **IPWireless UK**, **JFMG** and **Nomad Digital**, may be found at:
http://stakeholders.ofcom.org.uk/consultations/release_2010_2025/?showResponses=true.

which increases the likelihood of future mobile services in the band. Proponents of this view argued that reserving the band for PMSE would reduce the scope for future innovative mobile services and competition to the detriment of consumers.

Responses on licence exemption

3.6 In the consultation we sought views on following questions:

Question 4: Should any wireless-camera use of the band be licence-exempt?

Question 5: Should any other use of the band be licence-exempt?

3.7 The responses broadly rejected the idea of licence-exemption for any use in the band although one respondent suggested that licence-exempt use should be considered in connection with femtocell deployment.

Conclusion on our approach to releasing the spectrum

3.8 Our general approach to managing spectrum⁹ is that a market-led award of spectrum on a technology and service neutral basis is generally the most effective way of awarding spectrum in a way that secures optimal use, in line with our statutory duties. We recognise that it may be necessary to depart from this general principle in cases in which:

- we have identified a risk of significant market failure in a competitive award;
- we believe that some form of regulatory intervention exists which could effectively remedy the failure; and
- any risks of regulatory failure associated with the intervention, including the likelihood and size of an opportunity cost arising from precluding other uses of the spectrum, is outweighed by the potential benefits of the intervention.

3.9 The May consultation was based on evidence at that time that the most likely use of the band was for wireless cameras used for PMSE. Other uses were considered relatively unlikely so there would be a low opportunity cost associated with reserving the spectrum for PMSE. The evidence from the responses of demand from services other than PMSE for the band and from the German mobile spectrum auction (see above) of their potential value has caused us to reassess that view. This is because:

- the responses indicate that use of the band for mobile services is now more likely than we had previously thought; and
- the outcome of the German auction suggests that the band has material value for mobile use. Specifically, the band was acquired by a mobile operator, Telefónica O2 Germany, for €5.7m. This suggests that they foresee that there is value of at least that amount to be realised from the provision of mobile services using the band. This use would generate benefits for consumers and support innovation and competition.

3.10 We recognise the major contribution that PMSE makes to the economic, social and cultural well-being of the UK. However, our judgement in the light of the evidence that

⁹ See Spectrum Framework Review, 2005
<http://stakeholders.ofcom.org.uk/consultations/sfr/>

has come to light about the value of the band for mobile services is that reserving it for PMSE could deny access to a potentially higher value service and impose a high cost on consumers and would not necessarily be optimal.

- 3.11 In addition, we agree with respondents that licensed use of the band is more likely to lead to optimal use of the spectrum than licence exemption. This view is supported by the high valuation of licensed use revealed by the German auction and because of the lack of demand to date for licence-exempt use. Therefore we do not currently intend to introduce licence exempt-use in the band.
- 3.12 Accordingly, and in line with our general approach to spectrum management, we have concluded that it could be more beneficial to award the spectrum competitively by auction on a technology and service neutral basis. An award on this basis is more likely to secure the optimal use of the radio spectrum in line with our statutory duties as it would place the spectrum in the hands of those that value it most highly and that would be likely to use it to generate maximum benefits for society over time. We will review the position on how to release the spectrum in the light of the evidence available when we consult further on the award.

Implications for wireless camera users

- 3.13 Spectrum at 2 GHz is considered by PMSE users to best support the deployment of mobile wireless cameras. This is because it allows significant quantities of data to be transmitted whilst offering ideal propagation characteristics for the purposes of electronic news gathering. We are aware from licensing data and from discussions with PMSE representatives that demand for this spectrum sometimes exceeds supply at times of high demand, such as at major sporting or cultural events or where there is a news story of particular significance. Both the BBC's and JFMG's response to this consultation highlighted the advantages of allocating 2010-2025 MHz to PMSE to help meet increasing demand for wireless camera use.
- 3.14 We recognise, therefore, that PMSE users would have welcomed allocation of this spectrum to the sector's use. However, for the reasons set out above, we consider that the highest value use of this spectrum could be secured by having an open competition for these frequencies.
- 3.15 Over the past three and a half years, we have had constructive discussions with a number of wireless camera users¹⁰ to assist them in identifying how they can best use the spectrum available to them to meet their demand. It is our expectation that these discussions will continue over the coming months.

Temporary access and use during the London 2012 Olympic Games and Paralympic Games

- 3.16 In our consultation we said that until we had implemented our decision on releasing the spectrum (in this case holding the auction), we were minded to allow temporary use of the band for wireless cameras on a rolling six-month notice period and with fees for access set of the same basis as most of the spectrum at 2-3 GHz. We proposed that we should make the band available for the London 2012 Olympic Games and Paralympic Games ('the London 2012 Games').

¹⁰ In particular the industry forum, Spectrum for Programme Makers.

Responses

3.17 We sought views on the following questions:

Question 9a: If we do not immediately decide to allocate the band to PMSE, is there good reason not to allow temporary use for wireless cameras in line with our approach to the 2290 MHz band?

Question 9b: If so, what should we do until we make and implement our decision on the best way to release it?

Question 10: Do you agree we should make the 2010 MHz band available for the Olympics?

- 3.18 There was broad agreement to allowing temporary use of the band for wireless cameras on a rolling six or three month notice period pending a competitive award and support for setting fees set on a similar basis as other spectrum at 2-3 GHz.
- 3.19 There was also broad agreement to our proposal to make the band available where necessary for the London 2012 Games although one respondent argued that this would disincentivise the rapid deployment of services after a competitive award.

Decision

- 3.20 The earliest feasible date for an award of the 2010 MHz band is around Q1 2012. Consequently we think that the risk that temporary use of the band by PMSE and reservation for the London 2012 Games in summer 2012 will significantly hold back roll-out of services after a competitive award is low. This is because the window between the award and completion of the Games will be a few months, at maximum, or quite possibly non-existent. In addition, reservation for the London 2012 Games is unlikely to impose material opportunity costs because the spectrum is unused at present.
- 3.21 In terms of the duration of notice for PMSE access to this spectrum, we initially aligned our approach with that of the spectrum at 2290-2300 MHz. In December 2007, we published a statement¹¹ which set out our intention to allow wireless cameras access to 2290-2300 MHz on a rolling 6 month notice in light of the lack of evidence of demand from other services. This was comparable to the situation with 2010-2025 MHz at the time we published the May consultation.
- 3.22 However, in the light of the new evidence of demand for 2010-2025 MHz for mobile use, we do not now consider that 6 months is an appropriate notice period. The situation with 2010-2025 MHz is now more comparable to that of temporary access to 2500-2690 MHz in that we expect to award this spectrum in a competitive process. Temporary access to 2500-2690 MHz is on a three-month rolling notice period, which will be triggered at the point where we invite applications for the 2.6 GHz award¹². This period strikes a better balance between allowing wireless camera users to make alternative arrangements for their spectrum access whilst ensuring that spectrum will be clear for new uses at the point when we issue licences to the new users.

¹¹ <http://stakeholders.ofcom.org.uk/binaries/consultations/2ghzdiscuss/statement/22902300.pdf>

¹² The exception to this will be in those areas where the band is reserved for the London 2012 Games. We recently announced that the 2.6 GHz band will be made available for wireless cameras during the Games from 28 June to 23 September 2012.

3.23 In the light of this assessment, the operational need for spectrum access for wireless cameras to cover the London 2012 Games and the UK's international obligations to make spectrum available for the Games, we have decided to :

- allow temporary use of the band for PMSE¹³ use on a rolling three-month notice period, with fees for access set on a same basis and with technical licence conditions aligned with other spectrum used by PMSE at 2-3 GHz; and
- make the band available for the London 2012 Olympic Games and Paralympic Games at specified locations for the duration of the Games¹⁴.

3.24 Licences to access 2010-2025 MHz for PMSE use can now be obtained from JFMG¹⁵. This access is on the same terms and conditions, including price, as other spectrum used by PMSE in the 2 GHz band.

Combining the 2010 MHz and 2.6 GHz awards

3.25 In response to the May consultation, one confidential response suggested that we should have considered awarding 2010-2025 MHz with the 2.6 GHz unpaired spectrum to address demand for unpaired spectrum for mobile broadband services. This was in the context of an earlier version of the Government Direction that identified the need to hold an earlier award of unpaired spectrum, de-coupled from the combined auction of 2.6 GHz and 800 MHz paired spectrum. However, this option is no longer relevant given that the final Government Direction requires Ofcom to award the 2.6 GHz unpaired spectrum alongside the 2.6 GHz and 800 MHz paired spectrum.

Decision

3.26 We have considered whether there would be benefits in awarding the 2010-2025 MHz spectrum as part of the 800 MHz / 2.6 GHz combined award. If the 2010 MHz and 2.6 GHz bands are complements or substitutes, awarding the 2010-2025 MHz band as part of the same award process could lead to a more efficient outcome as bidders would be able to switch between the two bands or acquire holdings that complement each other. Although the likelihood of some form of mobile use in the band seems to have increased, which might strengthen the case for a combined award, we believe that the balance of advantage continues to favour progressing the releases independently. This is for the following reasons.

- The present direction does not include the 2010 MHz band.
- A separate award may lead to a more efficient outcome as:
 - the extent of substitutability and complementarity between the band and other mobile spectrum still seems limited (eg because of equipment availability);

¹³ Our May 2010 consultation specifically referred to making 2010-2025 MHz available for wireless camera use. Subsequent to that consultation, in August 2010, we published a statement on future PMSE spectrum access that confirmed that all PMSE-allocated spectrum would be available for any PMSE service or technology which complied with the relevant technical licence conditions.

¹⁴ Also see *The Spectrum Plan for the London 2012 Games* <http://stakeholders.ofcom.org.uk/binaries/consultations/london2012/statement/statement.pdf> and *The Spectrum Plan for the London 2012 Games: An Update* <http://stakeholders.ofcom.org.uk/binaries/consultations/london2012/statement/london2010Update.pdf>

¹⁵ www.jfmq.co.uk or 020 7299 8660

- smaller bidders interested in exploiting the 2010 MHz band rather than the 2.6 GHz band may be deterred from competing against MNOs bidding for 800 MHz or 2.6 GHz licences;
- a combined award would carry a higher risk of tactical bidding because of limited substitutability between the 2010 MHz band and other bands in the award. Some bidders could for example bid on the 2010 MHz band in order to maintain their eligibility to bid in future rounds, but without an intention to win or use the band. This could frustrate price revelation and efficient bidding, and could lead to an outcome that the winner of the 2010 MHz licence was not in fact the bidder with the highest valuation for the spectrum;
- keeping the awards separate would simplify their design and lead to potentially lower transaction costs for bidders and for Ofcom.

Questions relating to PMSE allocation

- 3.27 In the consultation, we considered a number of questions (questions 6a, 6b, 7a, 7b, 8a and 8b) which would have to be considered if the band were allocated to PMSE. In view of our conclusion, discussed above, in favour of a technology and service neutral competitive award, we do not discuss here responses to these questions as they relate to a scenario in which spectrum is reserved for PMSE.

Next steps

- 3.28 We intend to proceed with the award as soon as practicable given the other timing considerations discussed in this document and will consult further on the detailed award process, including specific technical and non-technical licence conditions.
- 3.29 The earliest feasible date for an award of the 2010 MHz band is in approximately 12 months time in Q1 2012. However, the timing of the award will depend on the prioritisation of this work relative to our spectrum management activities, and whether any additional evidence arises relating to demand for the spectrum or its value.

Impact assessment

- 3.30 This section constitutes an Impact Assessment for the specific aspects discussed in it. We will produce a more comprehensive Impact Assessment and carry out an Equality Impact Assessment when we consult on detailed plans for the award.

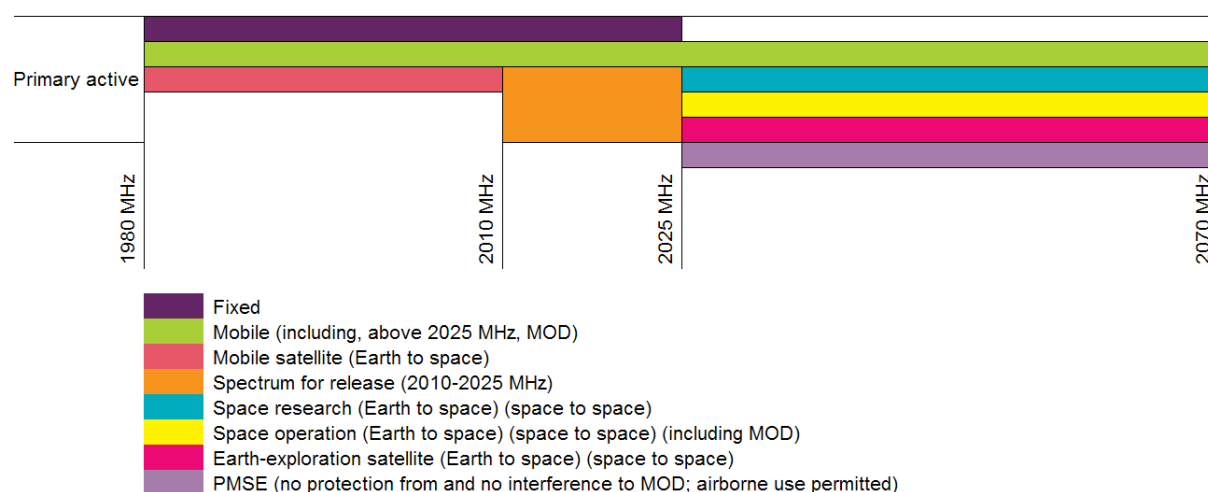
Annex 1

The 2010 MHz band

Allocations

A1.1 Figure 1 below, based on the UK Frequency Allocation Table (UKFAT) 2008 (Issue No. 15)¹⁶, shows the current allocations within and immediately adjacent to the 2010 MHz band.

Figure 1. Allocations in the 2010 MHz band and adjacent spectrum



A1.2 The band is allocated on a primary basis to the fixed and mobile services. Both are active services. The UKFAT adds a reference to footnote 5.388 in the Radio Regulations, which states the band is intended for use, on a worldwide basis, by administrations wishing to implement IMT-2000 (i.e. 3G) but such use does not preclude the use of this band by other services to which it is allocated.

A1.3 There are no secondary allocations for the band.

A1.4 There is more detailed information on the potential use of the band and adjacent bands in section 2 of the May consultation¹⁷.

¹⁶ <http://stakeholders.ofcom.org.uk/binaries/spectrum/spectrum-policy-area/spectrum-management/UK-FAT-Table-2008/ukfat08.pdf>

¹⁷ http://stakeholders.ofcom.org.uk/binaries/consultations/release_2010_2025/summary/20102025.pdf