



# Digital dividend: clearing the 800 MHz band

Funding for programme making and special events

Consultation

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## Section 1

# Executive summary

## A replacement for channel 69 and funding for PMSE users

- 1.1 On 30 June 2009, we published a statement<sup>1</sup> (the 800 MHz statement) setting out our decision to clear the 800 MHz band and the next steps for implementing the changes. Our proposal was endorsed by the Government, which committed to providing the funds necessary for clearance in its Digital Britain Final Report<sup>2</sup>. This decision has important implications for existing and planned authorised users of frequency channels 61, 62 and 69 in UHF Bands IV and V, who will no longer be able to use those channels.
- 1.2 This consultation relates to programme-making and special events (PMSE) users. We know that channel 69 is important to PMSE users because it is available to them UK-wide, which means they can use the same equipment across the country.
- 1.3 To help PMSE users move from channel 69 we will:
  - make available replacement spectrum, channel 38, which closely mirrors the utility of channel 69; and
  - make available funding to minimise the disruption of having to replace or modify channel 69 equipment when moving to replacement spectrum.
- 1.4 In relation to replacement spectrum, channel 38 is available for PMSE across most of the UK now, and will be available UK-wide from 1 January 2012. In the last couple of months we have done further technical work to see how the utility of channel 38 can be increased before then. We have reduced the ‘protection zones’ for radioastronomy use of channel 38 around Jodrell Bank and Cambridge and are continuing discussions with those users to see whether PMSE could share channel 38 inside the protection zones. We have also made significant progress in identifying a 24 MHz tuning range (channels 38-40) within which at least 8 MHz will be available for PMSE everywhere in the UK from later this year. This is an important step in helping those PMSE users with coverage requirements in the protection zones to move from channel 69.
- 1.5 We are discussing the basis on which funding will be made available with the Government. We set out in the 800 MHz statement our decisions on the categories of PMSE users who would definitely be eligible for such funding, and some who would definitely not be. We also identified several areas which required further consideration before we could decide whether users in those categories would be eligible for funding, and if they were, what evidence would be needed to support their applications for funding.
- 1.6 The purpose of this consultation is to invite feedback on the outstanding areas relevant to eligibility and the approach to calculating funding, as well as to seek

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<sup>1</sup> *Digital Dividend: Clearing the 800 MHz band*, Statement, 30 June 2009, <http://www.ofcom.org.uk/consult/condocs/800mhz/statement/>

<sup>2</sup> *Digital Britain: The Final Report*, 16 June 2009, [http://www.culture.gov.uk/what\\_we\\_do/broadcasting/6216.aspx](http://www.culture.gov.uk/what_we_do/broadcasting/6216.aspx)

information which allows us and the Government to better understand the scale of the funding that will be needed.

- 1.7 Our aim is to announce a decision on how funding will be administered later this year, with funding available as soon as possible thereafter.

### **Eligibility criteria**

- 1.8 We decided in the 800 MHz statement that, subject to the other established eligibility criteria, equipment hire companies that did not need to be licensed should be eligible for funding, subject to providing verifiable evidence. We propose in this consultation that a combination of rental agreements, company documents and marketing materials could constitute sufficient evidence that the company's operations are based on equipment hire that does not require a licence, as opposed to equipment use.
- 1.9 Users who held a licence to operate in channel 69 on 2 February 2009 will be eligible for funding for equipment which meets the relevant criteria. We propose that users who were licensed at any time in the 12 months preceding 2 February 2009 should be eligible for funding on the same terms. We propose that this is verified by reference to the JFMG licensee database. This recognises that some PMSE use of channel 69 may be seasonal or for a specific event, and it could therefore be legitimate to not have held a licence on 2 February 2009.
- 1.10 Provided PMSE users meet the relevant eligibility criteria, they can apply for funding for channel 69 equipment purchased before 2 February 2009. We propose that this time-limit should be extended to 30 June 2009, when we announced that channel 38 would be the replacement for channel 69, if the purchase can be justified as being for demonstrable and compelling reasons. We propose that an application for funding for such equipment should include a justification describing the equipment that needed to be replaced and why it had to be replaced, and evidence of ownership of both the replaced and new equipment.
- 1.11 We propose that equipment purchased after 30 June 2009 will not be eligible for funding. Such purchases will have been made in the full knowledge of the future clearance of channel 69 and that channel 38 would be the replacement. We also think that circumstances have changed, in particular in the light of the further technical work we have carried out on a UK-wide tuning range, to the extent that it is unlikely that PMSE users should need to invest in new channel 69 equipment.
- 1.12 Only PMSE users in channel 69 are eligible – subject to specific criteria – for funding. Other PMSE users are also affected by the wider clearance of frequency channels 31-37 and 61-68, but they have in our view been given sufficient notice and therefore have no reasonable expectation of continued access to those channels beyond the date of the clearance. We are willing to consider on a case by case basis representations from PMSE users who feel that there are exceptional circumstances that in their view entitle them to a different period of notice, and hence access to funding. However, we do not propose including such users in this funding scheme as a matter of course.

### **Calculating funding**

- 1.13 We set out our overall approach to funding in the context of our powers to make spectrum efficiency grants under the Wireless Telegraphy Act 2006, and invite comments on whether there are alternative ways of meeting the spectrum efficiency

objective when providing funding to PMSE users. Our proposed approach is to provide funding based on the residual value of the equipment, up to the point in time beyond which PMSE users could not reasonably have relied on an expectation to have access to channel 69. This means that funding would be available, broadly, in relation to the period from 1 January 2012 until the end of the equipment's useful life, or if earlier, the end of 2018. We ask if PMSE users believe a different time period would be reasonable.

- 1.14 We propose that ownership and date of purchase of equipment should be verified by reference to receipts or other proof of purchase, and invite views on what other evidence should be considered acceptable. We note that some PMSE users may not have receipts, and propose that in such cases we could make an assumption about how far through its lifecycle an item of equipment is.
- 1.15 We set out five factors which we propose to consider when deciding on the methodology for calculating funding and consider the way in which the funding for each individual item of equipment can be determined. A rate card where equipment is listed by type, model and year of purchase could be an example of how the funding calculation would work in practice. We also consider whether equipment should be aggregated by type of use – light, medium or heavy. We propose not to distinguish between users in this way, in part because it would be very difficult to decide where to draw the line between these different categorisations.
- 1.16 We ask a number of detailed questions about equipment currently owned by PMSE users. This information is important as it will help us and the Government to assess the overall amount of funding that will be needed, and the resources that will be required to administer the funding to PMSE users.

## Timing

- 1.17 It has not yet been decided when PMSE users will need to clear channel 69. The earliest date channel 69 will be cleared is 1 January 2012, but depending on the outcome of the work the Government is currently taking forward to resolve questions raised by the Independent Spectrum Broker's report for Digital Britain, it may yet be possible for PMSE access to some or all of the 800 MHz band to continue beyond 1 January 2012, up to the completion of DSO in late 2012. The Government's timetable for this aspect of Digital Britain suggests there should be clarity on this in September 2009. To inform the decision on the timing of clearance, we are inviting views from stakeholders on the impact of clearing channel 69 on 1 January 2012, and what could be done to provide for an orderly migration in those circumstances.
- 1.18 We are also asking for views on whether there is merit in calculating funding from an earlier date than 1 January 2012 (or a later date in 2012 from which channel 69 equipment can no longer be used) in order to encourage timely and managed migration.
- 1.19 We are concerned to ensure that equipment is only claimed for on one occasion. We propose that PMSE users should only be allowed to submit one application for funding, and that equipment could be required to be surrendered once it has been claimed for.

## **Licensing arrangements**

- 1.20 JFMG has drawn up proposals for applying both shared and co-ordinated licensing arrangements for channel 38. We invite views on these proposals, and propose to include frequencies from channels 39 and 40 in the shared licence arrangements.

## Section 2

# Introduction

## Clearing the 800 MHz band

- 2.1 On 2 February 2009 we published a consultation<sup>3</sup> (the 800 MHz consultation) on whether we should align the UK's digital dividend – the spectrum released by the switchover (DSO) from analogue to digital terrestrial television (DTT) – with a growing number of other countries in Europe. To do so, we would need to add frequency channels 61, 62 and 69 in UHF Bands IV and V to those already identified for the upper band of the UK's digital dividend (channels 63-68). This would create a block of spectrum covering channels 61-69 (790-862 MHz), which we refer to as the 800 MHz band.
- 2.2 We proposed clearing the 800 MHz band on the basis of the substantial benefits we expected this to bring citizens and consumers (conservatively estimated at £2-3 billion). But in doing so, we were also aware that there were implications of clearing existing and planned authorised users from these frequencies. Our proposal included consideration of how to ensure that these users – for DTT and programme making and special events (PMSE) – should not bear the extra costs that must reasonably be incurred to clear the 800 MHz band.
- 2.3 On 30 June 2009, we published a statement<sup>4</sup> (the 800 MHz statement) setting out our decision to clear the 800 MHz band and the next steps for implementing the changes. Our proposal was endorsed by the Government, which committed to providing the funds necessary for clearance in its Digital Britain Final Report<sup>5</sup>.
- 2.4 This consultation is relevant to PMSE users who will be affected by the clearance of channel 69 within the 800 MHz band. We are working separately on clearing DTT from channels 61 and 62.

## Decisions relevant to PMSE users

- 2.5 In our 800 MHz statement we set out, in relation specifically to PMSE users, our decisions to:
- allocate channel 38, currently available for PMSE and with UK-wide availability from 1 January 2012, as the replacement for channel 69;
  - award channel 38 to the band manager with PMSE obligations<sup>6</sup> on the same terms as previously planned for channel 69;

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<sup>3</sup> *Digital dividend: Clearing the 800 MHz band*, Consultation, 2 February 2009, <http://www.ofcom.org.uk/consult/condocs/800mhz/summary/>

<sup>4</sup> *Digital Dividend: Clearing the 800 MHz band*, Statement, 30 June 2009, <http://www.ofcom.org.uk/consult/condocs/800mhz/statement/>

<sup>5</sup> *Digital Britain: The Final Report*, 16 June 2009, [http://www.culture.gov.uk/what\\_we\\_do/broadcasting/6216.aspx](http://www.culture.gov.uk/what_we_do/broadcasting/6216.aspx)

<sup>6</sup> See *Digital Dividend Review: band manager award. Consultation on detailed award design*, 31 July 2008, <http://www.ofcom.org.uk/consult/condocs/bandmgr/> and *Digital dividend: band manager award, Second consultation on detailed award design*, 22 June 2009, <http://www.ofcom.org.uk/consult/condocs/bandmanager09/>



- allow PMSE users to access the 800 MHz band (including channel 69) until 1 January 2012 and possibly up to the end of DSO in late 2012. This timescale is dependent on the outcome of the work the Government is expediting to resolve the key questions raised by the Independent Spectrum Broker's report<sup>7</sup> for Digital Britain. PMSE users will also continue to have access to channel 36 on 12 months' notice to vacate and to the rest of the lower band of the digital dividend (channels 31-35 and 37) until the end of DSO;
  - provide funding for the move from channel 69 to channel 38 subject to meeting our eligibility criteria; and
  - base the level of funding on the residual value of the equipment being replaced (i.e. accounting only for the *unexpired* lifecycle of its use). This is to ensure that eligible PMSE users are left in the same position as if we had not decided to clear channel 69. This would not be the case (indeed, recipients would be left in a beneficial position) if funding decisions were based on the full value of replacement equipment.
- 2.6 We confirmed that funding will be made available to users who meet the criteria set out in the 800 MHz consultation (equipment must have been purchased before 2 February 2009, claimants must have held a valid Wireless Telegraphy Act licence to use channel 69 before that date and the equipment must be capable of tuning to channel 69 but not channel 38).
- 2.7 We also decided that unlicensed rental companies who can demonstrate to our satisfaction that their operations are based on equipment hire as opposed to equipment use that requires a licence, but who otherwise fulfil the criteria as set out in the 800 MHz consultation, should be eligible for funding, subject to further consultation to refine the precise definition of the criteria.
- 2.8 We decided that there were some categories of users who may be eligible for funding, subject to further consultation, namely:
- users who held channel 69 licences before 2 February 2009 but had legitimate reasons for allowing those licences to lapse for a period prior to this date;
  - users who needed to purchase channel 69 equipment between 2 February and 30 June 2009 for demonstrable and compelling reasons. This recognised that we did not confirm channel 38 as the replacement for channel 69 until we published the 800 MHz statement. Before this, the rational decision might therefore have been to continue to purchase channel 69 equipment if necessary; and/or
  - users who need to purchase channel 69 equipment between 30 June 2009 and 1 January 2012 because their existing equipment is demonstrably in need of replacement and channel 38 equipment will demonstrably fail to meet compelling operational requirements. This recognised that some PMSE users requiring UK coverage might have operational needs that channel 38 could not meet before becoming fully available for PMSE use.
- 2.9 We decided that the following groups of users will not be eligible for funding:

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<sup>7</sup> *Report from the Independent Spectrum Broker: findings and policy proposals*, 13 May 2009, [http://www.culture.gov.uk/reference\\_library/publications/6147.aspx](http://www.culture.gov.uk/reference_library/publications/6147.aspx)

- users whose equipment does not tune to channel 69. The position of these users is not made worse by clearing channel 69;
  - users whose equipment tunes to channel 69 but also tunes to channel 38. Again, these users are not left in a worse position by clearing channel 69; and
  - users who have never held a licence to operate in channel 69 or who did not have legitimate reasons for allowing their licence to lapse for a reasonable period prior to 2 February 2009. A licence is required for lawful use and we believe it inappropriate for public funding to be made available to those who have only ever used channel 69 without a licence or who lack legitimate reasons for allowing their licence to lapse. The Government, which has indicated it will meet the costs of clearing channel 69, shares this view.
- 2.10 We said we were minded to conclude that PMSE users of channels 31-37 and 61-68 would not be eligible for funding as a consequence of our decision to clear the 800 MHz band because they had been given more than sufficient notice of the need to clear this spectrum. This would be at least four years for users of channels 61 and 62 and more than six years for channels 31-37 and 63-68. However, we would consider representations from users who feel there are special circumstances that in their view may entitle them to a different period of notice.
- 2.11 We also outlined our planned next steps including further consultation on details of our eligibility criteria and how we will progress the development of a mechanism for the disbursement of funds.

### **The purpose of this consultation**

- 2.12 This consultation addresses those matters which we had indicated in the 800 MHz statement would require further consideration and input from PMSE users and other affected stakeholders.
- 2.13 This consultation both seeks information to allow us to better understand the scale of the funding that will need to be administered and allows stakeholders to provide input on outstanding areas relevant to eligibility and the basis for funding.
- 2.14 The remainder of this document is laid out as follows:
- Section 3 – context, purpose and objectives for funding;
  - Section 4 – eligibility criteria, including for users who did not hold a channel 69 licence on 2 February 2009, and for channel 69 equipment purchased after 2 February 2009;
  - Section 5 – key principles relating to calculating funding;
  - Section 6 – the timing of migration, including impact of timing of access to channel 69 for new uses;
  - Section 7 – the licensing arrangements for channels 38, 39 and 40;
  - Section 8 – next steps for establishing a funding mechanism and clearing PMSE from the 800 MHz band; and

- Annexes – including a list of consultation questions, the consultation response cover sheet, the impact assessment and information on the availability of channels 38, 39 and 40 for PMSE between now and the end of DSO.

## Section 3

# Context, purpose and objectives

## Future spectrum access for PMSE and funding for migration from channel 69

- 3.1 The PMSE sector makes a major contribution to the UK's social, cultural and economic well-being. It comprises a very wide variety of organisations and individuals using spectrum for an equally wide variety of different uses. There are thousands of business and professional users in broadcasting, entertainment, and events, and many more among charities and community organisations.
- 3.2 The way that we manage spectrum used by PMSE is therefore a very important issue. Spectrum is a scarce resource of enormous importance in a modern society. Our general approach to spectrum management is to rely more on the market, and less on regulation, as the way to promote the best use of this valuable resource. We want to give users the flexibility to decide how spectrum should be used, and to change that use as technologies and consumers' interests change. But we also recognise that PMSE users are in a different position to other potential uses of spectrum. PMSE users are disparate and fragmented and currently face difficulties coming together to aggregate their demand for spectrum. This problem of coordination means that any attempt to move to a market-based approach to spectrum access too quickly could lead to significant disruption for PMSE users and possibly market failure.
- 3.3 In a June 2007 consultation<sup>8</sup> we set out four key objectives for future spectrum access for PMSE users:
- avoiding disruption to PMSE users that adversely affects their ability to provide a wide range of services to citizens, consumers and business customers;
  - facilitating participation of the PMSE sector in a market-based approach to spectrum;
  - promoting the optimal use of spectrum in relation to all potential uses and users over time; and
  - avoiding the risks of regulatory and market failure.
- 3.4 Having regard to these objectives, the 800 MHz consultation set out a number of proposals for clearing PMSE from channel 69 while minimising any disruption this move would cause the sector. Knowing PMSE users place great importance on their UK-wide access to channel 69, we proposed replacement spectrum – channel 38 – that closely mirrored those characteristics of channel 69 which make it so attractive.
- 3.5 We also proposed that licensees should receive funding to minimise the disruption of having to replace or modify their channel 69 equipment to move to replacement spectrum.
- 3.6 We set out in the 800 MHz consultation and statement the case for clearing the 800 MHz band and the benefits we expect this to bring to citizens and consumers.

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<sup>8</sup> *Programme-making and special events: future spectrum access*, Consultation document, 20 June 2007, <http://www.ofcom.org.uk/consult/condocs/pmse/pmse.pdf>

Making available channel 38 to replace channel 69 and providing funding to facilitate the migration are the two key aspects of our plan to clear channel 69, which is an essential part of our wider objective of clearing the 800 MHz band.

## **A replacement for channel 69**

3.7 In the 800 MHz statement, we set out our assessment that channel 38 was the best alternative to channel 69, and confirmed that it would be available for PMSE use UK-wide from 1 January 2012. Since then, we have done further technical work to find ways in which the utility of channel 38 for PMSE can be increased, prior to 1 January 2012, including assessing the feasibility of:

- minimising the channel 38 ‘protection zones’ (the geographical areas around Jodrell Bank and Cambridge where channel 38 cannot be used for PMSE prior to 1 January 2012 in order to protect radioastronomy at those sites);
- establishing whether PMSE users could share the use of channel 38 within the protection zones, potentially on a temporal basis; and
- establishing whether there are other frequencies within a 24 MHz tuning range including channel 38 which could be used for PMSE within the protection zones.

3.8 We have made significant progress with this work, and can now confirm that:

- the protection zones have been reduced and redefined to more closely reflect the areas where radioastronomy requires protection. Revised maps are available in annex 6. This will allow improved indoor PMSE use of channel 38 in northwestern and eastern England, although outdoor use is still subject to significant constraints there;
- we are continuing to discuss with radioastronomers the scope for use of channel 38 for PMSE within the protection zones. We hope to be able to confirm the outcome of those discussions shortly; and
- we have made significant progress in identifying a 24 MHz tuning range which can provide an effective substitute for channel 69, until channel 38 is available on a UK-wide basis.

3.9 The practical effect of this further work is that, from the end of 2009, PMSE users will have UK-wide access to spectrum which closely mirrors the utility of channel 69, within the desired 24 MHz tuning range, as follows:

- indoor access to at least one of channels 38-40 in all UK locations, with most locations offering availability of either two or three channels; and
- outdoor access in most UK locations to at least 3 MHz of one of channels 38-40, with more frequencies available in most locations but some small zones where there will be no availability. Work on determining the extent of these areas on non-availability is still ongoing. This should lead to a revised picture which will, for instance, ensure that there will be outdoor spectrum availability in the Birmingham area.

3.10 These matters are set out in more detail in annex 7.

- 3.11 Identifying spectrum that closely matches the utility of channel 69 for PMSE users is a key step in facilitating clearance of channel 69. In particular, it goes some way to addressing the concerns which a number of PMSE users raised in response to the 800 MHz consultation about continuing to operate (and hence replacing and investing in new channel 69 equipment) on a UK-wide basis prior to 1 January 2012.

### **Funding for PMSE users**

- 3.12 We are empowered to make funding available by section 1(5) of the Wireless Telegraphy Act 2006, in the form of spectrum efficiency grants. Such grants require the consent of HM Treasury, and can only be made on the basis that they are likely to promote the efficient use or management of spectrum in the UK.
- 3.13 As well as this central requirement that spectrum efficiency grants must, in all circumstances, promote the efficient use or management spectrum, in exercising our powers we must also have regard to our statutory duties, set out in sections 3 and 4 of the Communications Act 2003. Of particular relevance to the present case is the requirement on us to secure the optimal use of spectrum and to have regard to the desirability of encouraging investment and innovation in relevant markets (which would include the PMSE sector), the different needs and interests of spectrum users (including PMSE users), and the interests of citizens and consumers.
- 3.14 The purpose of providing funding is to promote the efficient use of channel 69 in the context of clearing the 800 MHz band as a whole. In doing so, we will have regard to the objectives for future spectrum access for PMSE set out above, including minimising disruption that would adversely affect PMSE users' ability to provide a wide range of services to citizens, consumers and business customers.
- 3.15 In practice, we will base funding on the reasonable expectation PMSE users had, prior to 2 February 2009, of access to channel 69 and the residual value of equipment that can no longer be used as a consequence of clearance. Funding is not intended to cover all operational costs associated with having to change frequencies. We discuss and seek views on our overall approach to funding in section 5.
- 3.16 We want to set up a mechanism for administering funding as soon as possible. Its objectives will be to provide funding efficiently and in a way which meets the needs of eligible recipients, while ensuring that the funding is properly and prudently administered.
- 3.17 We expect options would include 'in house' management by us, contracting out to an external party, or a combination of the two. We will announce our decision on how funding is to be administered later in the year.

## Section 4

# Eligibility criteria

## Potentially eligible categories of users

- 4.1 In the 800 MHz statement we set out groups of users that we had indicated might be eligible for funding, subject to further consultation (restated in paragraphs 2.7 and 2.8). We are now seeking views on our proposals in relation to each group, the criteria for eligibility and what evidence users in these groups should provide to demonstrate their eligibility.

### **Rental companies who can demonstrate to our satisfaction that their operations are based on equipment hire as opposed to equipment use that requires a licence but who otherwise fulfil the criteria as set out in the 800 MHz consultation**

- 4.2 Because such companies are an exception to our decision that users who have never held a licence to operate in channel 69 are not entitled to funding, we will require clear, verifiable evidence that this is the basis of their operations. We think that, as a minimum, such evidence would need to include:
- rental agreements (including orders/invoices) with PMSE customers who are licensed;
  - relevant company documents (e.g. memorandum and articles of association setting out the objects of the company, business plans etc); and/or
  - marketing materials (e.g. brochures, catalogues, advertising, directory listings etc).

*Question 1: Do you agree with our proposals for sufficient evidence that a rental company's operations are based on equipment hire as opposed to equipment use that requires a licence? If not, what would you suggest as alternative evidence?*

### **Users who held channel 69 licences before 2 February 2009 but had legitimate reasons for allowing those licences to lapse for a period prior to this date**

- 4.3 We do not consider it would be appropriate to provide funding regardless of when the user's most recent licence lapsed. An extended period during which a user was not licensed suggests either that it ceased to use channel 69 equipment (and so has not been providing services that would be disrupted by clearance) or that its use continued without a licence.
- 4.4 We note that a user may have used channel 69 at specific times of the year, for example for an annual or seasonal event. A legitimate reason for that licence to lapse may be that the equipment for which it was required would not be used until the next planned event. We accept that there may a period of time between events and that the user does not need to hold a licence during that period of inactivity.
- 4.5 As a result, we propose that any user who has held a valid licence for using channel 69 at any time during the 12 months prior to 2 February 2009 should be eligible for funding as long as it justifies why its licence lapsed and meets the other eligibility

criteria. We will be able to check previous patterns of licensing against the PMSE licensing database. We consider that a period of 12 months is sufficient to account for discontinuous, periodic use, and that no funding should be available where a licence lapsed earlier than 2 February 2008.

*Question 2: Do you agree that users who have held a valid channel 69 licence at any time during the 12 months prior to 2 February 2009 and can justify why it lapsed should be eligible for funding, subject to the other conditions outlined above? If not, what other time period would you propose and why?*

#### **Users who needed to purchase channel 69 equipment between 2 February 2009 and 30 June 2009 for demonstrable and compelling reasons**

- 4.6 We propose that equipment purchased between 2 February 2009 and 30 June 2009 should be eligible for funding as long as the user justifies its purchase and meets the other eligibility criteria. We think that such justification should as a minimum:
- describe the equipment that needed to be replaced and why it had to be replaced at that time; and
  - be supported by evidence that the user owned the replaced equipment (e.g. an asset register or inventory, or insurance document) and owns the equipment that replaced it (e.g. a receipt or other proof of purchase).
- 4.7 PMSE users would not be eligible to receive funding for the replaced equipment as it would, by definition, be at the end of its lifecycle.

*Question 3: Do you agree that equipment purchased by eligible PMSE users between 2 February and 30 June 2009 should be eligible for funding, subject to providing evidence of the compelling reasons for making the purchase? Is there other evidence we should consider acceptable?*

#### **Users who need to purchase channel 69 equipment between 30 June 2009 and 1 January 2012 because their existing equipment is demonstrably in need of replacement and channel 38 equipment will demonstrably fail to meet compelling operational requirements**

- 4.8 In light of developments since the publication of the 800 MHz statement, and in particular the technical work we have carried out (see section 3 above and annexes 6 and 7), we consider that circumstances have changed to the extent that it is unlikely that these users will need to invest in new channel 69 equipment. This is for the following reasons:
- the further work on the availability of channels 38-40 from the end of 2009 means that there is a viable alternative option for all PMSE users of channel 69 equipment who operate indoors and for those who operate no more than three wireless microphones outdoors (with the exception of a small number of locations);
  - those remaining users who will need access to more frequencies on an outdoor basis than channels 38-40 can provide before 1 January 2012 should be able to take advantage of the continued utility of channel 69 equipment between now and then; and



- users would also have the option of hiring channel 69 equipment until channel 38 becomes available on a UK-wide basis.
- 4.9 Providing evidence that new equipment is necessary for *future* use on a UK-wide basis is inherently difficult and may increase the risk of fraudulent claims. This would not be in keeping with the need to disburse public funds in a responsible way.
- 4.10 In these circumstances, we think it would be very hard for users to provide evidence that their existing equipment is demonstrably in need of replacement by new channel 69 equipment. We also envisage that there would be difficulties in providing sufficient evidence that channel 38 equipment would demonstrably fail to meet compelling *future* operational requirements. On balance, we therefore propose that channel 69 equipment purchased after 30 June 2009 should not be eligible for funding.

*Question 4: Do you agree with our proposal that channel 69 equipment purchased after 30 June 2009 should not be eligible for funding? If not, what are the circumstances in which you think such equipment should be eligible?*

### **Users of channels 31-37 and 61-68**

- 4.11 We set out in paragraph 2.10 above our conclusion that PMSE users of channels 31-37 and 61-68 should not be eligible for funding as part of the scheme discussed in this document.
- 4.12 We propose to consider on a case by case basis representations from users of channels 31-37 and 61-68 who feel there are special circumstances that in their view may entitle them to a different period of notice than others. Such representations would need to provide compelling evidence of why the specific user's position differed fundamentally from the position of most other users of cleared spectrum.

*Question 5: Do you agree with our proposal to consider on a case by case basis representations from PMSE users of channels 31-37 and 61-68 who feel there are special circumstances that in their view may entitle them to a different period of notice than others? If not, please state your reasons.*

## Section 5

# Calculating funding

## Overall approach to funding

- 5.1 We set out in the 800 MHz statement that we would provide funding for PMSE users subject to meeting our eligibility criteria. We will do so under section 1(5) of the Wireless Telegraphy Act 2006, which gives us the power to make grants for the purposes of promoting the efficient use or management of spectrum, subject to the consent of HM Treasury. We must also have regard to our statutory duties, set out in sections 3 and 4 of the Communications Act 2003.
- 5.2 An important factor underpinning the efficient use or management of spectrum is that users have a degree of certainty about its future availability, based, amongst other things, on reasonable inferences drawn from regulatory statements. A lack of certainty reduces the incentives to invest in more efficient technology for using spectrum and reduces innovation which could lead to more efficient use. At the same time, users cannot reasonably expect spectrum to be available indefinitely, and there must be scope for the use of spectrum to change over time if it is to be used efficiently.
- 5.3 To determine the appropriate level of grants to promote the efficient use or management of spectrum, we take into account in particular the extent to which it was reasonable for a user to rely on the expectation of continued availability of the relevant frequencies, unless there are compelling spectrum efficiency reasons to deviate from this approach.
- 5.4 Grants are provided when this reasonable expectation is not met by the notice period provided to users, and the level of the grant is assessed with reference to the impact of curtailing the reasonable expectation of the user. Consistent with previous cases we would not provide funding in relation to periods when it would not have been reasonable for a user to rely on spectrum necessarily being available.
- 5.5 Our conclusion that PMSE users of channels 31-37 and 61-68 should not be eligible for funding is consistent with this approach, as they have been given appropriate notice that their access to these frequencies will cease, and cannot therefore reasonably rely on an expectation that spectrum will continue to be available. Our assessment of the appropriate notice period takes into account the minimum time in which a licensee can reasonably vacate a band. It also looks at other factors, including planning, procurement, testing and installation of new equipment. We only consider the remaining lifecycle of equipment if we determine that insufficient notice has been given to licensees to vacate the band.
- 5.6 In the case of channel 69, we gave notice to PMSE users in our 800 MHz consultation on 2 February 2009, and our proposals were confirmed in the 800 MHz statement on 30 June 2009. Prior to that notice, however, we had made statements about the future availability of channel 69 for PMSE which we consider may give rise to expectations beyond the minimum notice period.
- 5.7 In deciding how to calculate the amount of funding we will make available to eligible PMSE users, we have therefore considered carefully the statements we have made on the availability of channel 69 and the expectations arising on which PMSE users could reasonably have relied.

- 5.8 We have made the PMSE sector aware of future changes to its access to spectrum throughout our Digital Dividend Review. In our statement in December 2007<sup>9</sup> we stated we had decided that channel 69 should continue to be available for PMSE use throughout the UK on a licensed basis and that it would be awarded to a band manager required to meet reasonable PMSE demand on reasonable terms until 2018. We reaffirmed this policy in our first consultation on the detailed design of the band manager award in July 2008<sup>10</sup>.
- 5.9 On that basis, we consider that, until 2 February 2009, PMSE users could reasonably have relied on the expectation that channel 69 would continue to be available until 2018, on the understanding that users were prepared to pay fair, reasonable and non-discriminatory fees for that access. However, for the same reasons, we do not think that PMSE users could reasonably have relied on the expectation that channel 69 would be available beyond that date, let alone indefinitely.
- 5.10 We are therefore proposing to fund the replacement or modification of eligible channel 69 equipment for the remainder of its lifecycle between the date when channel 69 ceases to be available for PMSE and the date to which PMSE users could reasonably have expected it to be available prior to our proposals for clearance. In other words, funding will be available in relation to the period:
- from 1 January 2012 (or possibly later in 2012, up to the end of DSO, depending on the outcome of the work the Government has initiated to resolve the key questions raised by the Independent Spectrum Broker's report for Digital Britain, on which there should be clarity in September 2009); and
  - until the end of its useful life or, if earlier, the end of 2018.

*Question 6: Do you agree with our approach to calculating funding based on the residual value of the equipment for the period during which a PMSE user could reasonably have expected to have access to channel 69? If not, can you set out an alternative approach which meets the overall objective of promoting the efficient use of spectrum?*

*Question 7: Do you agree with our assessment that PMSE users could reasonably have expected to have access to channel 69 until 2018, but not beyond this date? If not, what time period would you consider reasonable, and why? In this context, please note, the fact that some equipment may be expected to operate beyond 2018 is not, on its own, a sufficient reason to reconsider that date.*

- 5.11 In section 6 of this consultation we discuss whether there could be merit in incentivising timely and orderly migration from channel 69 by calculating funding from the date on which a claim is approved *before* the date when PMSE is required to clear channel 69 in 2012.

## Verification

- 5.12 The date equipment was purchased could be simply and accurately verified by presenting a receipt or equivalent proof of purchase. A receipt will also be one way of verifying ownership.

<sup>9</sup> *Digital Dividend Review: A statement on our approach to awarding the digital dividend*, 13 December 2007, <http://www.ofcom.org.uk/consult/condocs/ddr/statement/statement.pdf>

<sup>10</sup> *Digital Dividend Review: band manager award, Consultation on detailed award design*, 31 July 2009, <http://www.ofcom.org.uk/consult/condocs/bandmgr/condoc.pdf>

- 5.13 However, we are aware from our conversations with PMSE users that many may not have kept receipts for their equipment. We need to consider whether there is other evidence that can be used to verify the date of purchase where this is the case. Such evidence could include asset inventories or detailed insurance records.

*Question 8: Do you have receipts for your equipment? What else do you consider we should accept as evidence of the date of purchase and proof of ownership?*

- 5.14 In the absence of evidence, we could make assumptions about the date of purchase of an item of equipment (e.g. that it is 70% through its lifecycle). This would have the advantage of being administratively efficient and giving a high level of certainty to users as to how much funding they can expect to receive. The disadvantages of this approach are the loss of accuracy in each individual assessment and the scope for abuse (e.g. to claim that no evidence is available for equipment older than our assumption would provide, so increasing the amount of funding calculated), which would be contrary to our aim to ensure that we make prudent use of public funds.

*Question 9: Do you think we should make assumptions about the date of purchase of equipment for which where there is no evidence? If so, what assumptions do you think we should make?*

## Methodology for equipment valuation

- 5.15 Within the overall approach to funding, described above, we need to design a methodology for assessing the amount of funding payable for each piece of eligible equipment. In determining the most appropriate methodology, we propose to consider the following factors:
- i) providing accurate funding for each claim;
  - ii) minimising administration and compliance costs;
  - iii) providing incentives for timely and orderly migration;
  - iv) dealing with claims quickly; and
  - v) ensuring a simple, transparent and predictable process.
- 5.16 We believe that a methodology which balances these factors would be consistent with our four key objectives for future spectrum access for PMSE (set out in section 3 above) for the following reasons:
- a method of funding which allows timely access for eligible claimants to accurate funding while minimising compliance burdens would help to minimise disruption that adversely affects PMSE users' ability to provide a wide range of services;
  - providing funding in a way that allows claims to be dealt with quickly in a predictable way, while also providing incentives for timely and orderly migration, will facilitate PMSE users' move to channel 38 and therefore their participation in a market-based approach to spectrum and will also help to promote the optimal use of spectrum in relation to all potential uses and users over time; and
  - a method of providing funding that is simple and transparent will help to avoid the risks of regulatory and market failure.

- 5.17 We also believe that minimising administration costs and seeking to provide accurate funding for eligible claims is an important aspect of ensuring prudent use of public funds.
- 5.18 The exact valuation methodology will be finalised in light of the information received from this consultation, as well as valuation advice from manufacturers and industry experts.

*Question 10: Do you agree with the factors we propose to consider when designing the methodology for determining the funding payable for each piece of eligible equipment? Are there any additional factors we should consider?*

## **Funding calculation**

- 5.19 There are a variety of ways in which funding for eligible equipment could be calculated. One option is to assess the funding for each item individually, according to equipment type, model, age, initial value and condition. This would be consistent with our proposed factor i above, providing accurate funding for each claim, as it would maximise the accuracy of the funding provided for each claim.
- 5.20 However, we understand that there are likely to be a large number of different models of equipment on the market which would fall within the criteria for funding. This has the potential for creating significant complexity in the funding scheme. Therefore, such an approach is likely to be unreasonably complicated to manage, resource intensive, time consuming and disproportionately expensive to administer. It could also lead to inconsistent and unpredictable outcomes for PMSE users, due to the necessary subjectivity involved in individual assessments. This would not therefore be consistent with our proposed factors ii-v.
- 5.21 Implementing a more standardised approach would simplify the process for assessing each individual claim so that it could be processed more efficiently. This would provide more certainty to PMSE users about what the outcome of their funding application was likely to be and so more certainty for taking investment and financing decisions going forward.
- 5.22 However, we also understand that the more we simplify the process the less able we will be to ensure that an accurate amount of funding is received by each eligible claimant. Therefore we consider that the other extreme – setting a blanket tariff for any eligible item of equipment – would also be unsatisfactory. Such an approach might be simple, predictable and low cost to administer, and thus consistent with our proposed factors ii-v, but also potentially unfair to claimants and/or not a prudent use of public funds, as some claimants could get significantly less than the residual value of their equipment and some would get significantly more.
- 5.23 Therefore, while we believe some form of simplification is necessary to make the funding mechanism workable in practice, this needs to be balanced with the desire to reflect the value of each claim. We consider that a suitable balance would be to determine a set value and lifecycle for each equipment type. We would base this assessment on information obtained from manufacturers and industry experts, as well as information provided in response to this consultation. We consider that this approach best meets the factors we have proposed in paragraph 5.15 above, as it provides a reasonable level of accuracy without unreasonably burdensome administration and/or compliance costs or processes. Such an approach also allows for greater predictability than one under which each individual piece of equipment is valued separately based on its current state of repair. It might also be possible to

group similar equipment into larger sub-group categories. However, we currently have insufficient information to determine whether this would simplify the process while retaining an adequate level of accuracy.

*Question 11: Do you agree with our proposal determine a set value and lifecycle for each equipment type, in the interests of simplifying the application and funding process? If not, what would you suggest? Do you think there is scope to group similar equipment into larger sub-groups to simplify the process?*

### Rate card

5.24 An example of how this might work in practice is through the use of a 'rate card' which allows applicants to select the model type of the piece of equipment, verify the year of purchase, and find out how much funding would be received for that item. A rate card could also provide an indication of the standard amount of funding applicants would receive if they do not hold proof of the purchase date. As discussed above, this standard funding amount might be based on an assumed average remaining asset life.

5.25 Figure 1 shows how a rate card might broadly work. This diagram is for illustrative purposes only and is not intended to suggest the true number of equipment categories or give an indication of the average equipment lifecycle.

**Figure 1. Illustrative rate card**

Equipment type	Purchased (new) in 2009	Purchased in 2008	Purchased in 2007	2006	2005	2004*
Equipment model 1	Funding payable for each eligible item of model 1 purchased in 2009	Funding for items of model 1 purchased in 2008	Funding for items of model 1 purchased in 2007	...	...	...
Model 2	Funding payable for each eligible item of model 2 purchased in 2009	Funding for model 2 purchased in 2008	Funding for model 2 purchased in 2007	...	...	...
Model 3	Funding payable for each eligible item of model 3 purchased in 2009	Funding for model 3 purchased in 2008	Funding for model 3 purchased in 2007	...	...	...
Model 4	Funding payable for each eligible item of model 4 purchased in 2009	Funding for model 4 purchased in 2008	Funding for model 4 purchased in 2007	...	...	...

\*Further columns would continue until the earliest year that equipment could have been bought and still have some useful life remaining in 2012.

5.26 At this time we do not have enough information to propose a detailed design for such a rate card. We propose that the design of any rate card, including specified equipment types, models and lifecycles, would be informed by responses to this consultation and advice from equipment manufacturers and industry experts.



- 5.27 We envisage that the rate card, which would be available publicly, will allow the funding administrator to easily calculate the amount of funding due for each eligible claim. Each applicant would need to provide information about their equipment, and if they hold a receipt (or other proof of purchase) the year that each item was purchased. This system would also allow eligible PMSE users to estimate the amount of funding they are likely to receive before submitting their application.

*Question 12: Do you agree that a rate card approach would be a practical way of calculating the funding for each item of eligible equipment? If not, how do you consider the amount of funding for each item of equipment should be calculated?*

### Aggregation of equipment by types of user

- 5.28 A further issue is whether to distinguish between different types of users of equipment, eg light, medium and heavy users, on the basis that the lifecycle of equipment may be somewhat greater in the hands of a light user. This might make the calculation of funding for each item more accurate, as per our factor i above.
- 5.29 However, it would add to the cost and complexity of the funding programme because separate rate cards would be required for each category of user. It would also be extremely difficult to establish what would constitute convincing evidence of the category each user should fall into and thus to distinguish between user types. This would not help minimise administration and compliance costs (factor ii), deal with claims quickly (factor iv) or ensure a simple, transparent and predictable process (factor v). Distinguishing between different types of users would have no impact on providing incentives for timely and orderly migration (factor iii).
- 5.30 We therefore propose not to distinguish between equipment by type of user.

*Question 13: Do you agree with our proposal not to distinguish between equipment by type of user? If not, what would be your preferred approach?*

### **Equipment**

- 5.31 To enable us to assess the total funding required and ensure that sufficient funding is in place to meet eligible applications it is important that we gain as complete an understanding as possible of the total amount of equipment in the market that is likely to be eligible for funding, its lifecycle and its likely residual value. This will also help us set up a scheme to administer the funding.
- 5.32 We would therefore be grateful if you could answer the following questions about the equipment you own (*not* rent) which you believe may be eligible for funding.

*Question 14: What type(s) of equipment do you own (e.g. wireless microphone, in-ear monitor) which uses channel 69? For each equipment type:*

- (a) How many pieces of equipment do you own?*
- (b) Can this equipment be modified (or re-tuned) to function in channel 38? If so, what would be the average cost of this modification?*
- (c) What was the average purchase price (excluding VAT)?*
- (d) On average, how many years would you normally keep this equipment in operation?*
- (e) Does the useful life of equipment vary with the amount and method of use? If so, in what way?*
- (f) What is the average age of the equipment?*

- (g) *Would you normally sell or dispose of the equipment at the end of its useful life? If sold, how much on average would you expect to receive for it? If disposed of, how would you normally dispose of it? How much does this disposal normally cost?*



## Section 6

# Timing

## Clearing PMSE from channel 69

- 6.1 In the 800 MHz statement, we confirmed that channel 38 will be the replacement for PMSE use of channel 69. Users can therefore already begin the process of moving from channel 69. Channel 69 (and the rest of the 800 MHz band) will remain available for PMSE use until at least the date when protection for UK radioastronomy use of channel 38 ceases, currently 1 January 2012.
- 6.2 We recognised these timescales fell short of the three-year period we proposed in the 800 MHz consultation and which we still believe to be reasonable – if challenging – for an orderly migration from channel 69 to channel 38. Depending on the outcome of the Government-expedited work to resolve the key questions raised by the ISB's report for Digital Britain, it may yet be possible for PMSE access to some or all of the 800 MHz band to continue beyond 1 January 2012, up to the completion of DSO in late 2012. If that is not the case, we and the Government will need to consider how best to provide for an orderly migration. The Government's timetable for this aspect of Digital Britain suggests there should be clarity on this issue in September 2009.
- 6.3 To inform decisions on the timing of clearing PMSE from channel 69, we welcome stakeholders' views on the impact of clearance on 1 January 2012 and how we and the Government could help to facilitate migration for users in these circumstances.

*Question 15: How would a decision to clear PMSE from channel 69 on 1 January 2012 affect you? What could we and the Government do to provide for an orderly migration in these circumstances?*

## Timely migration to channel 38

- 6.4 As channel 69 will be available for PMSE use at least until channel 38 becomes available UK wide (1 January 2012), PMSE users will not experience any loss of utility until after that date. We have therefore proposed funding be calculated based on the residual value of the equipment at that date. However, we understand that there are risks to an orderly migration if too many PMSE users delay ordering new equipment or modifying existing equipment until late in this timetable.
- 6.5 A timely and orderly migration to channel 38 could be important from a spectrum efficiency point of view, as it may ensure that the spectrum can be cleared for new uses sooner and make the clearance process smoother overall. In principle, the sooner the spectrum is cleared, the sooner it can be used for new services that will benefit citizens and consumers.
- 6.6 For this reason, we believe there could be merit in facilitating a timely migration to channel 38 of those PMSE users for which this is convenient. This would see funding calculated from the date on which a claim is approved *before* PMSE is required to clear channel 69 in 2012. It would also be consistent with our key objectives for future spectrum access for PMSE because:
- an orderly migration increases the likelihood that users will be able to purchase channel 38 equipment in good time to meet their operational needs and so avoid disruption that adversely affects their ability to provide a wide range of services;

- it facilitates their participation in a market-based approach to spectrum by encouraging early migration to a band that will be awarded to the band manager;
- it promotes the optimal use of spectrum as it will encourage successful clearing of channel 69 for alternative uses; and
- it helps to avoid the risks of regulatory and market failure as it will reduce the likelihood and extent of equipment manufacturers experiencing order backlogs.

6.7 However, calculating funding from a date earlier than 2012 would increase the overall amount required, in return for benefits that, while qualitatively of merit, we are currently unable to quantify with any accuracy. Prudent use of public funds requires that we and the Government, which has committed to provide the funds necessary for clearance, be satisfied that the costs of facilitating early migration to channel 38 are justified by the benefits.

*Question 16: Do you believe we should facilitate early migration to channel 38 of those PMSE users for which this is convenient? If so, can you quantify the benefits? Would you take advantage of this option if it were available?*

### **Surrender of equipment**

6.8 It will be important to ensure eligible equipment is only claimed for on one occasion. One way of ensuring this would be to require PMSE users to surrender equipment in return for receiving funding for it. This would reduce the risk of false or inaccurate claims and would be consistent with avoiding over-compensation. However, we recognise that in practice, it would not necessarily be efficient to put channel 69 equipment beyond use while that channel is still available for PMSE.

6.9 Another option would be to allow each PMSE user to submit only one application for funding and to reserve the right to require the surrender of equipment if we considered it expedient to do so. For example, PMSE users could be allowed to retain their equipment after receiving funding if they provided a bank guarantee to the funding administrator. This could then be voided when the equipment funding was received for was surrendered.

6.10 We prefer the second option as this maximises flexibility for PMSE users during the migration period while affording sufficient safeguards against abuse.

*Question 17: Do you agree with our proposal to allow each PMSE user to submit only one application for funding and to reserve the right to require the surrender of equipment for which funding has been received? If not, how do you suggest we ensure items are only claimed for on one occasion?*

## Section 7

# Licensing arrangements

## Channel 38 to be licensed in a way comparable to channel 69

7.1 Channel 69 licences are available in two formats, namely:

- coordinated, whereby specific frequencies are assigned in advance to an individual licensee, ensuring that it can operate free from harmful interference; and
- shared, whereby 14 set frequencies are named in the licence which can be used UK-wide without the need for prior coordination. Whilst there is an increased risk of harmful interference from other PMSE users with these licences, licensees attach value to them for the flexibility that this arrangement gives.

7.2 In our 800 MHz consultation we did not refer to the licensing arrangements that would be put in place for channel 38 if we confirmed it as the replacement for PMSE use of channel 69. However, a number of respondents argued that the utility of channel 38 would depend, to a great extent, on the continued availability of shared licences. We agreed in principle with this viewpoint and said in the 800 MHz statement that we would consult on the precise details of licensing arrangements for shared use of channel 38. This would allow us to investigate whether there was an opportunity to improve on the current shared licence regime for channel 69.

7.3 We asked JFMG to look at this issue. It recently set out on its website<sup>11</sup> three high level options for how channel 38 licences could be issued in the future. Table 2 reproduces the options that JFMG identified with the key advantages and disadvantages of each.

**Table 2. Options for new licensing arrangements for channel 38**

Option	Advantages	Disadvantages
1: a licence for specific frequencies only – as for the current channel 69 licence but with one or more robust sets of frequencies aimed at different user groups on an advisory basis	Familiar to users Potential for improvement	Inhibits innovation
2: a blanket licence for use of any frequency within a defined band – no frequency plan defined. Manufacturers design optimised plans to suit their equipment	Removes barriers to innovation	Does not give guidance to users
3: a blanket licence for use of any frequency within a defined band with band manager guidance – no frequency plan defined but recommended frequency plans published by the band manager for guidance and potentially to interleave different user groups. Manufacturers can still produce and deploy individually optimised sets	Reduces barriers to innovation Can still reflect users' requirements	

7.4 These options are by no means exhaustive and stakeholders may identify other approaches to licensing which they consider would improve upon the current arrangements.

<sup>11</sup> [http://www.jfmg.co.uk/pages/news/38licensing\\_options.htm](http://www.jfmg.co.uk/pages/news/38licensing_options.htm)

- 7.5 We invite comments on the options identified by JFMG and on any other approaches stakeholders prefer. If you wish to discuss any of the details of the three options above, please contact JFMG on 020 729 8660 or at [admin@jfmq.co.uk](mailto:admin@jfmq.co.uk).

*Question 18: What are your views on the three options for new licensing arrangements for channel 38 identified by JFMG? Do you prefer any different approaches?*

## Channels 39 and 40

- 7.6 In paragraphs 3.7 to 3.11 we set out our recent assessment of the availability of channels 39 and 40 and how this can at least partially replicate the key characteristics of channel 69 when combined in a tuning range with channel 38. Channels 38-40 may provide a solution to the issue of providing UK-wide spectrum access for PMSE users until channel 38 becomes available for PMSE use on a UK-wide basis from 1 January 2012.
- 7.7 Where channel 38 is not available in the meantime but channels 39 and/or 40 are, we see merit in providing the same opportunity to use these channels on a shared licence basis. As a result, we are proposing to add frequencies from channels 39 and 40 onto any channel 38 shared licence. These additional frequencies would be available on a similar shared basis as the channel 38 frequencies.
- 7.8 This would involve some minor coordination between mobile PMSE users and JFMG, which we envisage could be done by way of a simple online check through the JFMG website. Users would need to check which of the three channels is available in the area where they are operating. When they know this, they could then tune to the relevant frequencies as set out in their shared licence.
- 7.9 We intend that these arrangements should be set up only for channel 38 frequencies where they are available. Access to channels 39 and 40 will be available on a shared licence basis where channel 38 is not available.

*Question 19: Do you agree with our proposal to include frequencies from channels 39 and 40 in the shared licence arrangements for channel 38?*

- 7.10 Access to these channels will on this basis be available up until the date the band manager with PMSE obligations starts operating (currently envisaged by autumn 2010) and may be subject to change thereafter. However, we expect that the band manager will offer terms of access in a way that does not cause undue disruption to PMSE users in the short term.

## Section 8

# Next steps

- 8.1 This consultation closes on 11 September 2009. We have chosen to allow only four weeks – a shorter period than normal – because of the urgency of putting in place a mechanism to administer funding to PMSE users. We think that, in this instance, a short consultation period is in the interest of affected stakeholders.
- 8.2 We appreciate that a short consultation period during the summer can make it difficult for some stakeholders to respond. We will do our best to take into account responses received after the closing date. But it will help us if you could let us know, before the closing date, if you think you will need more time to respond.
- 8.3 We will publish a statement setting out our decisions on the questions raised in this consultation later in the year. Before then, we expect the Government to provide certainty on the duration of PMSE access to the 800 MHz band (including channel 69).
- 8.4 We are not planning to consult again on these matters. However, should any further consultation be required, not least as a result of responses to this consultation, we would expect to conduct it on a similarly expedited timetable in order to minimise delays to implementation.
- 8.5 We expect that we will announce details of how funding will be administered later this year, with funding being available as soon as possible thereafter.

## Annex 1

# Responding to this consultation

## How to respond

- A1.1 We invite written views and comments on the issues raised in this document, to be made by 5 p.m. on 11 September 2009.
- A1.2 We strongly prefer to receive responses using the online web form at [http://www.ofcom.org.uk/consult/condocs/pmse\\_funding/howtorespond/form](http://www.ofcom.org.uk/consult/condocs/pmse_funding/howtorespond/form) as this helps us to process the responses quickly and efficiently. We would also be grateful if you could assist us by completing a response cover sheet (see annex 3) to indicate whether or not there are confidentiality issues. This response cover sheet is incorporated into the online web form questionnaire.
- A1.3 For larger consultation responses – particularly those with supporting charts, tables or other data – please email [john.canavan@ofcom.org.uk](mailto:john.canavan@ofcom.org.uk) attaching your response in Microsoft Word format, together with a consultation response cover sheet.
- A1.4 Responses may alternatively be posted to the address below, marked with the title of the consultation.
- John Canavan  
Spectrum Policy Group  
Third Floor  
Riverside House  
2a Southwark Bridge Road  
London SE1 9HA
- Note that we do not need a hard copy in addition to an electronic version. We will acknowledge receipt of responses if they are submitted using the online web form but not otherwise.
- A1.5 It would be helpful if your response could include direct answers to the questions asked in this document, which are listed together in annex 3. It would also help if you can explain why you hold your views and how our proposals would impact on you.

## Further information

- A1.6 If you want to discuss the issues and questions raised in this consultation or need advice on the appropriate form of response, please contact John Canavan on 020 7981 3172.

## Confidentiality

- A1.7 We believe it is important for everyone interested in an issue to see the views expressed by consultation respondents. We will therefore usually publish all responses on our website, [www.ofcom.org.uk](http://www.ofcom.org.uk), ideally on receipt. If you think your response should be kept confidential, please specify what part and why. Please also place such parts in a separate annex.

- A1.8 If someone asks us to keep part or all of a response confidential, we will treat this request seriously and try to respect it. But sometimes we will need to publish all responses, including those that are marked as confidential, in order to meet legal obligations.
- A1.9 Please also note that copyright and all other intellectual property in responses will be assumed to be licensed to us to use. Our approach on intellectual property rights is explained further on our website at <http://www.ofcom.org.uk/about/account/disclaimer/>.

## Next steps

- A1.10 Following the end of the consultation period, we intend to publish a statement later in the year.
- A1.11 Please note that you can register to receive free mail updates alerting you to the publications of relevant Ofcom documents. For more details, please see [http://www.ofcom.org.uk/static/subscribe/select\\_list.htm](http://www.ofcom.org.uk/static/subscribe/select_list.htm).

## Our consultation processes

- A1.12 We seek to ensure that responding to a consultation is easy as possible. For more information, please see our consultation principles in annex 2.
- A1.13 If you have any comments or suggestions on how we conduct our consultations, please call our consultation helpdesk on 020 7981 3003 or email us at [consult@ofcom.org.uk](mailto:consult@ofcom.org.uk). We would particularly welcome thoughts on how we could more effectively seek the views of those groups or individuals, such as small businesses or particular types of residential consumer, who are less likely to give their opinions through a formal consultation.
- A1.14 If you would like to discuss these issues or our consultation processes more generally, you can alternatively contact Vicki Nash, Director Scotland, who is our consultation champion.

Vicki Nash  
Ofcom  
Sutherland House  
149 St. Vincent Street  
Glasgow G2 5NW

Tel: 0141 229 7401  
Fax: 0141 229 7433

Email: [vicki.nash@ofcom.org.uk](mailto:vicki.nash@ofcom.org.uk)

## Annex 2

# Our consultation principles

- A2.1 We have published the following seven principles that we will follow for each public written consultation:

### Before the consultation

- A2.2 Where possible, we will hold informal talks with people and organisations before announcing a big consultation to find out whether we are thinking in the right direction. If we do not have enough time to do this, we will hold an open meeting to explain our proposals shortly after announcing the consultation.

### During the consultation

- A2.3 We will be clear about whom we are consulting, why, on what questions and for how long.
- A2.4 We will make the consultation document as short and simple as possible with a summary of no more than two pages. We will try to make it as easy as possible to give us a written response. If the consultation is complicated, we may provide a shortened Plain English Guide for smaller organisations or individuals who would otherwise not be able to spare the time to share their views.
- A2.5 We will consult for up to 10 weeks depending on the potential impact of our proposals.
- A2.6 A person within Ofcom will be in charge of making sure we follow our own guidelines and reach out to the largest number of people and organisations interested in the outcome of our decisions. Our consultation champion will also be the main person to contact with views on the way we run our consultations.
- A2.7 If we are not able to follow one of these principles, we will explain why.

### After the consultation

- A2.8 We think it is important for everyone interested in an issue to see the views of others during a consultation. We will usually publish all the responses we have received on our website. In our statement, we will give reasons for our decisions and an account of how the views of those concerned helped shape them.



## Annex 3

# Consultation response cover sheet

- A3.1 In the interests of transparency and good regulatory practice, we will publish all consultation responses in full on our website: [www.ofcom.org.uk](http://www.ofcom.org.uk).
- A3.2 We have produced a cover sheet for responses (see below) and would be very grateful if you could send one with your response. (It is incorporated into the online web form if you respond in this way.) This will speed up our processing of responses and help to maintain confidentiality where appropriate.
- A3.3 The quality of consultation can be enhanced by publishing responses before the consultation period closes. In particular, this can help those individuals and organisations with limited resources or familiarity with the issues to respond in a more informed way. Therefore, we would encourage respondents to complete their cover sheet in a way that allows us to publish their responses on receipt rather than waiting until the consultation period has ended.
- A3.4 We strongly prefer to receive responses via the online web form, which incorporates the cover sheet. If you are responding via email or post, you can download an electronic copy of this cover sheet in Word or RTF format from the consultations section of our website at [www.ofcom.org.uk/consult/](http://www.ofcom.org.uk/consult/).
- A3.5 Please put any parts of your response you consider should be kept confidential in a separate annex to your response and include your reasons why this part of your response should not be published. This can include information such as your personal background and experience. If you want your name, address, other contact details or job title to remain confidential, please provide them in your cover sheet only so that we do not have to edit your response.

## Cover sheet for response to an Ofcom consultation

### BASIC DETAILS

Consultation title:

To (Ofcom contact):

Name of respondent:

Representing (self or organisation/s):

Address (if not received by email):

### CONFIDENTIALITY

Please tick below what part of your response you consider is confidential, giving your reasons why

Nothing

☐

Name/contact details/job title

☐

Whole response

☐

Organisation

☐

Part of the response

☐

If there is no separate annex, which parts?

If you want part of your response, your name or your organisation not to be published, can we still publish a reference to the contents of your response (including, for any confidential parts, a general summary that does not disclose the specific information or enable you to be identified)?

### DECLARATION

I confirm that the correspondence supplied with this cover sheet is a formal consultation response that Ofcom can publish. However, in supplying this response, I understand that Ofcom may need to publish all responses, including those marked as confidential, in order to meet legal obligations. If I have sent my response by email, Ofcom can disregard any standard email text about not disclosing email contents and attachments.

Ofcom seeks to publish responses on receipt. If your response is non-confidential (in whole or in part) and you would prefer us to publish your response only once the consultation has ended, please tick here.

☐

Name

Signed (if hard copy)

## Annex 4

# Consultation questions

*Question 1: Do you agree with our proposals for sufficient evidence that a rental company's operations are based on equipment hire as opposed to equipment use that requires a licence? If not, what would you suggest as alternative evidence?*

*Question 2: Do you agree that users who have held a valid channel 69 licence at any time during the 12 months prior to 2 February 2009 and can justify why it lapsed should be eligible for funding, subject to the other conditions outlined above? If not, what other time period would you propose and why?*

*Question 3: Do you agree that equipment purchased by eligible PMSE users between 2 February and 30 June 2009 should be eligible for funding, subject to providing evidence of the compelling reasons for making the purchase? Is there other evidence we should consider acceptable?*

*Question 4: Do you agree with our proposal that channel 69 equipment purchased after 30 June 2009 should not be eligible for funding? If not, what are the circumstances in which you think such equipment should be eligible?*

*Question 5: Do you agree with our proposal to consider on a case by case basis representations from PMSE users of channels 31-37 and 61-68 who feel there are special circumstances that in their view may entitle them to a different period of notice than others? If not, please state your reasons.*

*Question 6: Do you agree with our approach to calculating funding based on the residual value of the equipment for the period during which a PMSE user could reasonably have expected to have access to channel 69? If not, can you set out an alternative approach which meets the overall objective of promoting the efficient use of spectrum?*

*Question 7: Do you agree with our assessment that PMSE users could reasonably have expected to have access to channel 69 until 2018, but not beyond this date? If not, what time period would you consider reasonable, and why? In this context, please note, the fact that some equipment may be expected to operate beyond 2018 is not, on its own, a sufficient reason to reconsider that date.*

*Question 8: Do you have receipts for your equipment? What else do you consider we should accept as evidence of the date and price of purchase and proof of ownership?*

*Question 9: Do you think we should make assumptions about the date of purchase of equipment for which there is no evidence? If so, what assumptions do you think we should make?*

*Question 10: Do you agree with the factors we propose to consider when designing the methodology for determining the funding payable for each piece of eligible equipment? Are there any additional factors we should consider?*

*Question 11: Do you agree with our proposal determine a set value and lifecycle for each equipment type, in the interests of simplifying the application and funding process? If not, what would you suggest? Do you think there is scope to group similar equipment into larger sub-groups to simplify the process?*

*Question 12: Do you agree that a rate card approach would be a practical way of calculating the funding for each item of eligible equipment? If not, how do you consider the amount of funding for each item of equipment should be calculated?*

*Question 13: Do you agree with our proposal not to distinguish between equipment by type of user? If not, what would be your preferred approach?*

*Question 14: What type(s) of equipment do you own (e.g. wireless microphone, in-ear monitor) which uses channel 69? For each equipment type:*

- (a) How many pieces of equipment do you own?*
- (b) Can this equipment be modified (or re-tuned) to function in channel 38? If so, what would be the average cost of this modification?*
- (c) What was the average purchase price (excluding VAT)?*
- (d) on average, how many years would you normally keep this equipment in operation?*
- (e) Does the useful life of equipment vary with the amount and method of use? If so, in what way?*
- (f) What is the average age of the equipment?*
- (g) Would you normally sell or dispose of the equipment at the end of its useful life? If sold, how much on average would you expect to receive for it? If disposed of, how would you normally dispose of it? How much does this disposal normally cost?*

*Question 15: How would a decision to clear PMSE from channel 69 on 1 January 2012 affect you? What could we and the Government do to provide for an orderly migration in these circumstances?*

*Question 16: Do you believe we should facilitate early migration to channel 38 of those PMSE users for which this is convenient? If so, can you quantify the benefits? Would you take advantage of this option if it were available?*

*Question 17: Do you agree with our proposal to allow each PMSE user to submit only one application for funding and to reserve the right to require the surrender of equipment for which funding has been received? If not, how do you suggest we ensure items are only claimed for on one occasion?*

*Question 18: What are your views on the three options for new licensing arrangements for channel 38 identified by JFMG? Do you prefer any different approaches?*

*Question 19: Do you agree with our proposal to include frequencies from channels 39 and 40 in the shared licence arrangements for channel 38?*

## Annex 5

# Impact Assessment

## Introduction

- A5.1 The analysis presented in this annex represents an impact assessment, as defined in section 7 of the Communications Act 2003.
- A5.2 You should send any comments on this impact assessment to us by the closing date for this consultation. We will consider all comments before deciding whether to implement our proposals.
- A5.3 Impact assessments provide a valuable way of assessing different options for regulation and showing why the preferred option was chosen. They form part of best practice policy-making. This is reflected in section 7 of the Communications Act, which means that generally we have to carry out impact assessments where our proposals would be likely to have a significant effect on businesses or the general public or when there is a major change in our activities. However, as a matter of policy, we are committed to carrying out and publishing impact assessments in relation to the great majority of our policy decisions. For further information about our approach to impact assessments, see the guidelines “Better policy-making: Ofcom’s approach to impact assessment,” which are on our website: [http://www.ofcom.org.uk/consult/policy\\_making/guidelines.pdf](http://www.ofcom.org.uk/consult/policy_making/guidelines.pdf).
- A5.4 We do not consider that specific equality issues are raised at this stage. We will consider in due course whether such issues may be relevant to how the funding is administered.

## The citizen and consumer interest

- A5.5 On 30 June 2009, we published a statement setting out our decision to clear the 800 MHz band (the 800 MHz statement). This confirmed that, from 2012, PMSE users would be required to clear channel 69 but that channel 38 would be available for PMSE use on a UK-wide basis. The 800 MHz statement also confirmed that funding would be made available to eligible PMSE users in order to minimise disruption.
- A5.6 Having a mechanism in place which administers funding efficiently and in a way which meets the needs of eligible recipients, while ensuring that the funding is properly and prudently administered, will be key to clearing channel 69 in a way which avoids disruption to PMSE users that adversely affects their ability to provide a wide range of services to citizens, consumers and business customers.

## Our policy objective

- A5.7 In the 800 MHz statement, we confirmed some categories of PMSE users who would definitely be eligible for funding and some who would definitely not be eligible. We noted, however, that there were some areas which we needed to consider in more detail, and promised to consult on those shortly.
- A5.8 This consultation is intended to address those matters. The consultation is both an information gathering exercise to allow us to better understand the scale of the funding that will need to be administered and how eligibility can best be verified,

and a means for stakeholders to provide input on outstanding areas relevant to eligibility criteria and calculating funding.

- A5.9 We said in the 800 MHz statement that we want to be in a position to announce our decision on how funding will be made available later in 2009, with the mechanism for administering funding in place as soon as possible thereafter.

### **Information gathering and other aspects of the consultation**

- A5.10 In the consultation, we have asked factual questions about the amount of equipment that PMSE users have, its lifecycle and value and the cost and feasibility of modifying it. These questions are intended to give us a better understanding of the overall scale of affected equipment in the market. This will help us to properly scope and resource the mechanism we will set up to administer the funding. We have also asked about the potential impact on PMSE users of clearing channel 69 on 1 January 2012, earlier than we previously expected, and what we and the Government could do to mitigate any adverse impact. These questions are not policy proposals, and no impact assessment is necessary.
- A5.11 We have also asked questions and made proposals about the type of evidence that we could use to verify that a potential applicant for funding meets the eligibility criteria. For example, we have proposed that rental agreements with PMSE customers is one of several acceptable ways to demonstrate that a person is an equipment hire company that does not require a licence, and hence also potentially eligible for funding. These proposals relate to practical evidence rather than funding policy, and have therefore not been included in this impact assessment.
- A5.12 In the 800 MHz statement we noted we would consider representations from PMSE users of channels 31-37 and 61-68 who feel that there are special circumstances that in their view entitle them to a different notice period and, by implication, to funding. We are not proposing to include those users in the funding scheme discussed in this consultation and this has not been included in this impact assessment.
- A5.13 Finally, we have set out in the consultation our overall approach to calculating funding, based on our statutory powers and duties, and the factor we propose to consider when designing the methodology for determining funding. We have not included these matters in the impact assessment.

### **Consultation proposals**

- A5.14 The key policy proposals in the consultation are considered in more detail below.

### **Licences held before, but not on, 2 February 2009**

- A5.15 We said in the 800 MHz statement that there may be some PMSE users who had held channel 69 licences before 2 February 2009 but who had legitimate reasons for allowing those licences to lapse for a period prior to that date who might be eligible for funding.
- A5.16 We said we would consult further on what reasonable criteria for eligibility should apply for such users, including the acceptable duration for a user not to have held a channel 69 licence before 2 February 2009.

## Options considered

A5.17 We have considered the following options:

- Option 1: PMSE users who did not hold a licence for channel 69 on 2 February 2009 should not be eligible for funding.
- Option 2: PMSE users who did not hold a licence for channel 69 on 2 February 2009 should be eligible for funding if they had held a licence for channel 69 during the preceding 12 months.
- Option 3: PMSE users who did not hold a licence for channel 69 on 2 February 2009 should be eligible for funding if they had held a licence for channel 69 during the preceding 36 months.

## Analysis of the different options

	<b>Option 1: Not eligible</b>	<b>Option 2: Eligible if licensed in preceding 12 months</b>	<b>Option 3: Eligible if licensed in the preceding 36 months</b>
<b>Impact on stakeholders</b>	PMSE users who, for example, use channel 69 for a recurring event (perhaps annual or seasonal), but who did not hold a licence for channel 69 on 2 February 2009, would not be eligible for funding.	PMSE users who, for example, use channel 69 for a recurring event (perhaps annual or seasonal), and had held a licence during the 12 months prior to 2 February 2009, would be eligible for funding.  Based on a high level analysis of the PMSE licensing database, our understanding is that this would increase the overall number of eligible users by approximately 10%.	PMSE users who had held a licence during the 36 months prior to 2 February 2009, would be eligible for funding. This would increase the overall number of eligible users by more than the 10% estimated for option 2.
<b>Costs and benefits</b>	Arguably this option imposes a cost on PMSE users who regularly use channel 69, own channel 69 equipment, and had a good reason for not holding a licence on 2 February 2009 (e.g. although they regularly use channel 69, they were not using the spectrum on that date).  It would avoid adding	This option would benefit those PMSE users who held a licence during the 12 months preceding 2 February 2009, as they would be eligible for funding.  However, it would increase the overall complexity of the scheme and hence the administrative burden involved in implementing the	It would benefit those PMSE users who held a licence during the 36 months preceding 2 February 2009, as they would be eligible for funding. This would increase the complexity of the scheme and the administrative burden of implementing the scheme a greater degree than under both other options.

	to the overall cost and complexity of the funding scheme, and hence the administrative burden of implementing the scheme.	scheme.	
<b>Risks and unintended consequences</b>	There is a risk that we would disadvantage a group of PMSE users who are in principle in the same situation as eligible users, except they did not hold a licence on the date we set.	There is a risk of being over-inclusive, so that PMSE users who are not genuinely affected by the changes become eligible for funding. This would not be a prudent use of public funds.	There is a greater risk than under option 2 of extending eligibility to former PMSE users whose equipment is no longer in use, and hence are not genuinely affected by the changes become eligible for funding. This would not be a prudent use of public funds.
<b>Impact on different groups of users, with flow-through effects on specific groups of consumers</b>	It is possible that this option disadvantages PMSE users who provide services for annual or seasonal events, compared to those who hold annual licences for channel 69 or happened to hold a licence on 2 February 2009. Consequently, this might have a flow-through effect on citizens and/or consumers who attend such events	This option does not disadvantage PMSE users providing services for annual or seasonal events, compared to other users.	Like option 2, this does not disadvantage PMSE users providing services for annual or seasonal events, compared to other users.

### The preferred option

- A5.18 Our preferred option is option 2. We propose that PMSE users who did not hold a licence for channel 69 on 2 February 2009 should be eligible for funding if they did hold a licence for channel 69 during the preceding 12 months.
- A5.19 We think it is reasonable to assume that there are users who regularly use channel 69 and are affected by its clearance, but who did not hold a licence on 2 February 2009. However, we do not think it is justifiable to allow applications for funding from PMSE users who have held a licence for channel 69 more than 12 months prior to that date.
- A5.20 We have chosen this option because it captures PMSE users who use channel 69 regularly, but who were not licensed on 2 February 2009, including those who use it on an annual or seasonal basis. It is consistent with our overall objectives for clearing PMSE from channel 69. It strikes a balance between including those users who are genuinely disadvantaged by the clearance of channel 69, and those who had no intention of continuing to use it but had held a licence sometime in the past.



- A5.21 Allowing users to claim even if their licences lapsed in the three years prior to 2 February 2009 would carry an unacceptable risk of claims being made for equipment which has not been providing services that would be disrupted by clearing channel 69 or which has been used without a licence.

### **Equipment purchased between 2 February 2009 and 30 June 2009**

- A5.22 We said in the 800 MHz statement that some users who needed to purchase channel 69 equipment between 2 February 2009 and the publication of the 800 MHz statement on 30 June 2009 for compelling and demonstrable reasons may be eligible for funding.
- A5.23 We said we would consult further on whether such users should be eligible, and if so, what reasonable criteria should apply, including what would constitute a demonstrable and compelling reason to purchase channel 69 equipment in this period.

### Options considered

- A5.24 We considered the following options:
- Option 1 – equipment purchased between 2 February and 30 June 2009 will not be eligible for funding.
  - Option 2 – equipment purchased between 2 February and 30 June 2009 will be eligible for funding provided the PMSE user can provide evidence of compelling reasons.

### Analysis of the different options

	<b>Option 1: Not eligible</b>	<b>Option 2: Eligible subject to evidence of compelling reasons</b>
<b>Impact on stakeholders</b>	Some PMSE users may have needed to purchase equipment for UK-wide use between the date when we announced our proposal to clear the 800 MHz band and the date when we confirmed that channel 38 would be the replacement spectrum for PMSE use of channel 69. If these users purchased channel 69 equipment during that period, they would be disadvantaged if such equipment is not eligible for funding.	This would benefit PMSE stakeholders who needed to purchase replacement UK-wide equipment in this period.
<b>Costs and benefits</b>	This option would impose the cost of the uncertainty over the replacement spectrum during this specific period on the PMSE users. We understand from PMSE stakeholders that the amount of channel 69 equipment purchased during this period was low, reflecting this uncertainty. In this context, we expect that users would only have purchased equipment if it was strictly	This option would make the funding scheme more complex and hence increase the administrative burden of providing funding.

	necessary for their business needs.	
<b>Risks and unintended consequences</b>	The risk of this option is that it could unfairly disadvantage PMSE users who bought equipment in this period, when they did not have certainty about the spectrum which would be available as a replacement to channel 69.	The risk of this option is that it would be over-inclusive, and allow PMSE users to apply for funding even though they made their investment decisions with the knowledge that channel 69 would not be available in the longer term. Despite the requirement for compelling reasons, it may be that a more efficient option, such as rental, could have been possible for some recipients.
<b>Impact on different groups of users, with flow-through effects on specific groups of consumers</b>	There is a risk of disadvantaging a group of PMSE users who needed to replace some equipment before the replacement for channel 69 had been confirmed. The resulting cost to such users may put them at a disadvantage, relative to other PMSE users. We do not believe the impacts of this option are likely to flow through to any specific group of consumers.	This option does not disadvantage PMSE users who needed to replace equipment before the replacement for channel 69 had been confirmed, compared to other users.

### The preferred option

- A5.25 Our preferred option is option 2. We propose that equipment purchased between 2 February and 30 June 2009 will be eligible for funding provided the PMSE user can provide evidence of compelling reasons.
- A5.26 We think it is reasonable to include equipment purchased in this period, subject to the provision of compelling evidence, as channel 38 had not at that stage been confirmed as the replacement for channel 69, and it would therefore have been rational for users to purchase channel 69 equipment if it was necessary for them to replace UK-wide equipment.

### **Equipment purchased between 30 June 2009 and 1 January 2012**

- A5.27 We said in the 800 MHz statement that some users who needed to purchase channel 69 equipment between 30 June 2009 and 1 January 2012, when channel 38 becomes available UK-wide, because their existing equipment is demonstrably in need of replacement and channel 38 equipment will demonstrably fail to meet compelling operational requirements, may be eligible for funding.
- A5.28 We said we would consult further on whether such users should be eligible, and if so, what reasonable criteria should apply, including what would constitute a demonstrable and compelling reason to purchase channel 69 equipment in this period.

### Options considered

- A5.29 We considered the following options:
- Option 1 – equipment purchased between 30 June 2009 and 1 January 2012 will not be eligible for funding.

- Option 2 – equipment purchased between 30 June 2009 and 1 January 2012 will be eligible for funding provided the PMSE user can provide evidence that their existing equipment is demonstrably in need of replacement and channel 38 equipment will demonstrably fail to meet compelling operational requirements.

### Analysis of the different options

	<b>Option 1: Not eligible</b>	<b>Option 2: Eligible subject to evidence of compelling reasons</b>
<b>Impact on stakeholders</b>	This option would impact on PMSE users who need to purchase channel 69 equipment after we confirmed on 30 June 2009 that channel 38 would be available but before it becomes available UK-wide on 1 January 2012.	This option will benefit PMSE users who need to purchase channel 69 equipment after we confirmed on 30 June 2009 that channel 38 would be available but before it becomes available UK-wide on 1 January 2012.  However, in the light of our further technical work, the likely availability of second hand channel 69 equipment and the possibility of renting channel 69 equipment, there should be few, if any instances where the purchase of new channel 69 equipment is necessary.
<b>Costs and benefits</b>	In the light of our further technical work, the likely availability of second hand channel 69 equipment and the possibility of renting channel 69 equipment, there should be few, if any instances where the purchase of new equipment is necessary. The cost to PMSE users of equipment purchased during this period not being eligible for funding is therefore likely to be relatively low.  There is no additional administrative burden from increased funding under this option	This option would increase the complexity of the scheme and hence the administrative burden, both in terms of the actual funding (as we would be funding the residual value of new as well as existing equipment) and in terms of administering the funding (as we would need to consider more complex evidence and criteria around the need to replace equipment and whether that particular user really needed equipment for use UK-wide).
<b>Risks and unintended consequences</b>	It is possible that PMSE users who decide to invest in new equipment in this period may be disadvantaged.  An unintended consequence may be a significant increase in demand for rental and second hand channel 69 equipment.	An unintended consequence might be that we artificially underpin the market in new channel 69 equipment when it would seem more efficient to invest in channel 38 equipment.
<b>Impact on different groups of users, with flow-through effects on specific groups of consumers</b>	We do not think this option is likely to impact on any specific groups, or that there are any flow-through effects on specific groups of consumers.	We do not think this option is likely to impact on any specific groups, or that there are any flow-through effects on specific groups of consumers.

### The preferred option

- A5.30 Our preferred option is that channel 69 equipment purchased after 30 June 2009 will not be eligible for funding (option 1).
- A5.31 We are aware that PMSE users may well have equipment that comes to the end of its usable life after we announced our intention to clear channel 69 but before the replacement frequency, channel 38, is available UK-wide. When we published the 800 MHz statement, the situation was that if the operational needs of the PMSE user were such that they needed to use their equipment UK-wide, the only available frequency would be channel 69 until 1 January 2012. In that scenario, we thought that the only option for a PMSE user who wanted to continue to use equipment that worked across the UK in this case would be to purchase new channel 69 equipment.
- A5.32 There have, however, been significant developments to address the availability of UK-wide spectrum which closely mirrors the utility of channel 69. Our technical work has shown that channels 38-40 will provide comparable indoor coverage across the UK, as well as close to adequate outdoor coverage, from December 2009. We also expect that there will be channel 69 equipment available on the second hand market during this period, and on the rental market, during this period.
- A5.33 This option provides clear criteria for determining which equipment is eligible, therefore, it minimises uncertainty. It also avoids additional administrative burden, which may be difficult to quantify, in implementing the funding scheme.

### **Funding calculation**

- A5.34 There are a variety of ways in which funding for eligible equipment could be calculated.

### Options considered

- A5.35 We considered the following options:
- Option 1 – assess the funding for each item individually, according to equipment type, model, age, initial value and condition.
  - Option 2 - set a blanket tariff for any eligible item of equipment.
  - Option 3 - determine a value and lifecycle for each equipment model.

### Analysis of the different options

	<b>Option 1: assess the funding for each item individually</b>	<b>Option 2: setting a blanket tariff</b>	<b>Option 3: set a value and lifecycle for each model</b>
<b>Impact on stakeholders</b>	This would provide an accurate valuation for each item, which would be in the interest of PMSE users. But assessing each item individually would be a time consuming and	Potentially unfair to PMSE users as some could get significantly less than the residual value of their equipment and some would get significantly	Provides a reasonable level of accuracy without unreasonably burdensome administration and/or compliance costs or processes. This option is

	complex task. It would increase the time it takes to consider each application for funding	more	also more predictable for users than one where each individual piece of equipment is valued separately.
<b>Costs and benefits</b>	The time taken to calculate each claim may outweigh the benefit to users of detailed accuracy. Administering the funding scheme would be very complex and require significant resources.	Simple, predictable and low cost to administer, but also potentially not a prudent use of public funds or effective in securing efficient management of the spectrum, as the funding administered would not be closely linked to the residual value of the item.	This option balances the need to make the funding mechanism workable in practice with the desire to reflect the residual value of each item.
<b>Risks and unintended consequences</b>	Risk of disputes over individual valuations, lack of certainty for users over the amount they may receive, which could make it more difficult to plan the purchase of replacement equipment.	Potentially unfair. Some applicants would receive more than the actual residual value of their equipment, while some would receive less.	Some risk of disputes over equipment valuations as even two items of the same model of equipment bought in the same year may be in different states of repair, which affects their real residual value. Some applicants could therefore receive more than the actual residual value of their equipment, while some would receive less.
<b>Impact on different groups of users, with flow-through effects on specific groups of consumers</b>	We do not think this option would have a particular impact on any specific group of user, or on specific groups of consumers	We do not think this option would have a particular impact on any specific group of user, or on specific groups of consumers	We do not think this option would have a particular impact on any specific group of user, or on specific groups of consumers

### The preferred option

A5.36 Our preferred option is to determine a value and lifecycle for each equipment model (option 3).

A5.37 We believe some form of simplification is necessary to make the funding mechanism workable in practice, but this needs to be balanced with the desire to reflect the value of each claim. We consider that this approach best meets the factors we have proposed in paragraph 5.15 above, as it provides a reasonable level of accuracy whilst avoiding the most burdensome administration and/or compliance costs or processes. Such an approach also allows for greater predictability than one under which each individual piece of equipment is valued separately based on its current state of repair.

## Aggregation by type of equipment user

A5.38 We have considered whether to distinguish between light, medium and heavy users of equipment on the basis that the lifecycle of equipment may be somewhat greater in the hands of a light user.

A5.39 We considered the following options:

- Option 1 – to distinguish between different types of equipment user, for example light, medium and heavy users
- Option 2 – to not distinguish between different types of equipment user

### Analysis of the different options

	<b>Option 1: distinguish between different types of equipment user</b>	<b>Option 2: not distinguish between types of equipment user</b>
<b>Impact on stakeholders</b>	This might make the calculation of funding more accurate for each item, which would be in the interest of PMSE users	This would mean that equipment owned by light, medium and heavy users would be assumed to have the same value and lifecycle, regardless of the type of user. This could potentially benefit some PMSE users, and potentially disadvantage others.
<b>Costs and benefits</b>	It would add to the cost and complexity of the funding programme which makes the scheme more complex to administer.	It would reduce the complexity of the funding programme and increase certainty for users.
<b>Risks and unintended consequences</b>	Risk of disputes over categorisation of users. Risk of over-compensation, as more users may argue that they are 'light users' as they would then benefit from a longer lifecycle. Risk that type of use is not necessarily directly relevant to lifecycle, eg an particular heavy user might maintain equipment to a higher standard than a particular light user.	Risk that the residual value of some equipment would be undervalued. This could be mitigated by assuming the 'light user' lifecycle applied to all equipment, although this would in turn increase the risk of over-compensation.
<b>Impact on different groups of users, with flow-through effects on specific groups of consumers</b>	This might benefit light users in comparison to heavy users, as a longer lifecycle would be assumed for their equipment. In turn, this might benefit consumers who use their services. The overall effect would depend on how large the assumed difference is between the types of user.	The impact on different groups of users depends on which lifecycle is applied to all users (whether it is closer to the lifecycle achieved by light users as opposed to heavy users).

### The preferred option

A5.40 Our preferred option is to not distinguish between different types of users (option 2).

- A5.41 We think that it would add to the cost and complexity of the funding programme because separate rate cards would be required for each category of user. It would also be extremely difficult to establish what would constitute convincing evidence of the category each user should fall into and thus distinguishing between user types. This would not help minimise administration and compliance costs dealing with claims quickly, or ensuring a simple, transparent and predictable process.

## Timely migration

- A5.42 A timely and orderly migration to channel 38 could be important from a spectrum efficiency point of view, as it may facilitate the clearance of the spectrum for new uses according to an orderly timetable and make the clearance process smoother overall. We could help to incentivise migration prior to 2012 by allowing funding to be calculated from the date on which a claim is approved *before* PMSE is required to clear channel 69 in 2012, as opposed to calculating the funding from the date the equipment can no longer be user in channel 69.

## Options considered

- A5.43 We considered the following options:

- Option 1 – to calculate funding from the date in 2012 when equipment can no longer be used in channel 69.
- Option 2 - to calculate funding from the date on which an application for funding is approved, if that date falls before the date when PMSE is required to clear channel 69 in 2012.

## Analysis of the different options

	<b>Option 1: calculate funding from clearance date in 2012</b>	<b>Option 2: calculate funding from date of application approval</b>
<b>Impact on stakeholders</b>	This would allow PMSE users to receive funding from the date when channel 69 is no longer available.	This would allow PMSE users to receive more funding if they made an early application.
<b>Costs and benefits</b>	PMSE users will not experience any loss of utility of their equipment until after channel 69 becomes unavailable. This option therefore provides funding only for the actual cost of clearing channel 69.	A timely and orderly migration to channel 38 could be important from a spectrum efficiency point of view, as it may ensure that the spectrum is cleared for new uses according to an orderly timetable and make the clearance process smoother overall. In principle, the sooner the spectrum is cleared, the sooner it can be used for new services that will benefit citizens and consumers.
<b>Risks and unintended consequences</b>	Risks to an orderly migration if too many PMSE users delay ordering new equipment or modifying existing equipment until late in the timetable.	Risk that it increases the complexity of the scheme and the administrative burden of administering funding.
<b>Impact on different groups of users, with flow-through effects on specific groups of consumers</b>	Equal impact on all PMSE users. We have not identified any flow-through effects on specific groups of consumers.	Equal impact on all PMSE users. We have not identified any flow-through effects on specific groups of consumers.

### The preferred option

A5.44 We do not have a preferred option, but invite views from stakeholders on this matter.

### **Licensing arrangements**

A5.45 JFMG has set out proposed licensing arrangements for channel 38. We propose extending those to frequencies in channels 39 and 40, where available.

### Options considered

A5.46 We considered the following options:

- Option 1 - to not include channels 39 and 40 in the licensing arrangements for channel 38 proposed by JFMG
- Option 2 - to include channels 39 and 40 in the licensing arrangements for channel 38 proposed by JFMG

### Analysis of the different options

	<b>Option 1: to not include channels 39 and 40 in the licensing arrangements</b>	<b>Option 2: to include channels 39 and 40 in the licensing arrangements</b>
<b>Impact on stakeholders</b>	PMSE users would not be able to use frequencies in channels 39 and 40 on a shared licence basis.	PMSE users would be able to use frequencies in channels 39 and 40 on a shared licence basis.
<b>Costs and benefits</b>	This would reduce the utility of these frequencies for PMSE use.	This would increase the utility of these frequencies for PMSE use.
<b>Risks and unintended consequences</b>	Risk of not making the most efficient use of existing spectrum resources	Potential risk to existing PMSE users of channels 39 and 40 who use coordinated (as opposed to shared) licences.
<b>Impact on different groups of users, with flow-through effects on specific groups of consumers</b>	Potential impact on users who want to use their equipment UK-wide as they would not be able to get a shared licence for each of channels 38, 39 and 40, and the possibility of a flow through effect on the consumers who would use their services.	We have not identified an impact on different groups of users, or any flow-through effects on specific groups of consumers.

### The preferred option

A5.47 Our preferred option is to include frequencies from channels 39 and 40 in the shared licence arrangements for channel 38.

A5.48 Channels 38-40 may provide a solution to the issue of providing UK-wide spectrum access for PMSE users until channel 38 becomes available for PMSE use on a UK-wide basis from 1 January 2012. Where channel 38 is not available in the meantime but channels 39 and/or 40 are, we see merit in providing the same opportunity to use these channels on a shared licence basis.



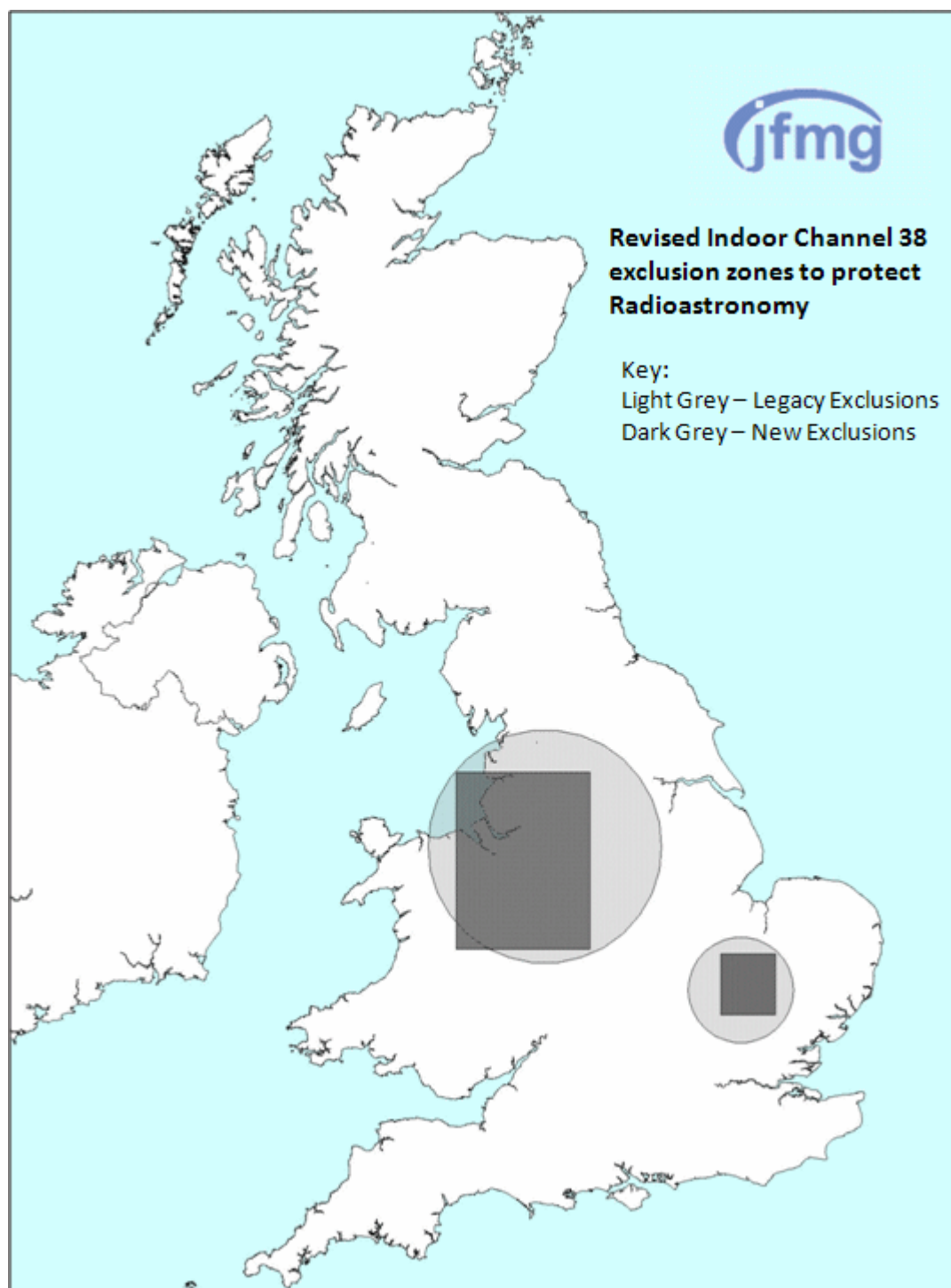
## Annex 6

# Radioastronomy protection zones

## Introduction

- A6.1 We stated in our 800 MHz statement that we would assess the current technical assumptions that underpin the arrangements to protect radioastronomers in channel 38. A key part of this was to revisit the extent of the protection zones around Jodrell Bank and Cambridge and to see if there was any scope to reduce their size.
- A6.2 We found that the original protection zones were based on conservative assumptions and that there was scope to reduce their size. However, our provisional conclusion was that this applied to indoor use only. As a result, the map below only shows a reduced zone for indoor use and outdoor exclusions remain the same.
- A6.3 Since we undertook this initial analysis, we have identified further potential operational improvements (to do with our ability to identify where spectrum is available in specific locations and to license on that basis) which will enhance the scope for 10 mW wireless microphones to use channel 38 on both an indoor and outdoor basis. These improvements will not impact on the rights of radioastronomy as the primary user of this spectrum.
- A6.4 As a result, we consider that Figure 1 below represents a conservative assumption of the extent of the protection zones for radioastronomy.

**Figure 1. Revised indoor radioastronomy protection zones for 10 mW wireless microphone use**



## Annex 7

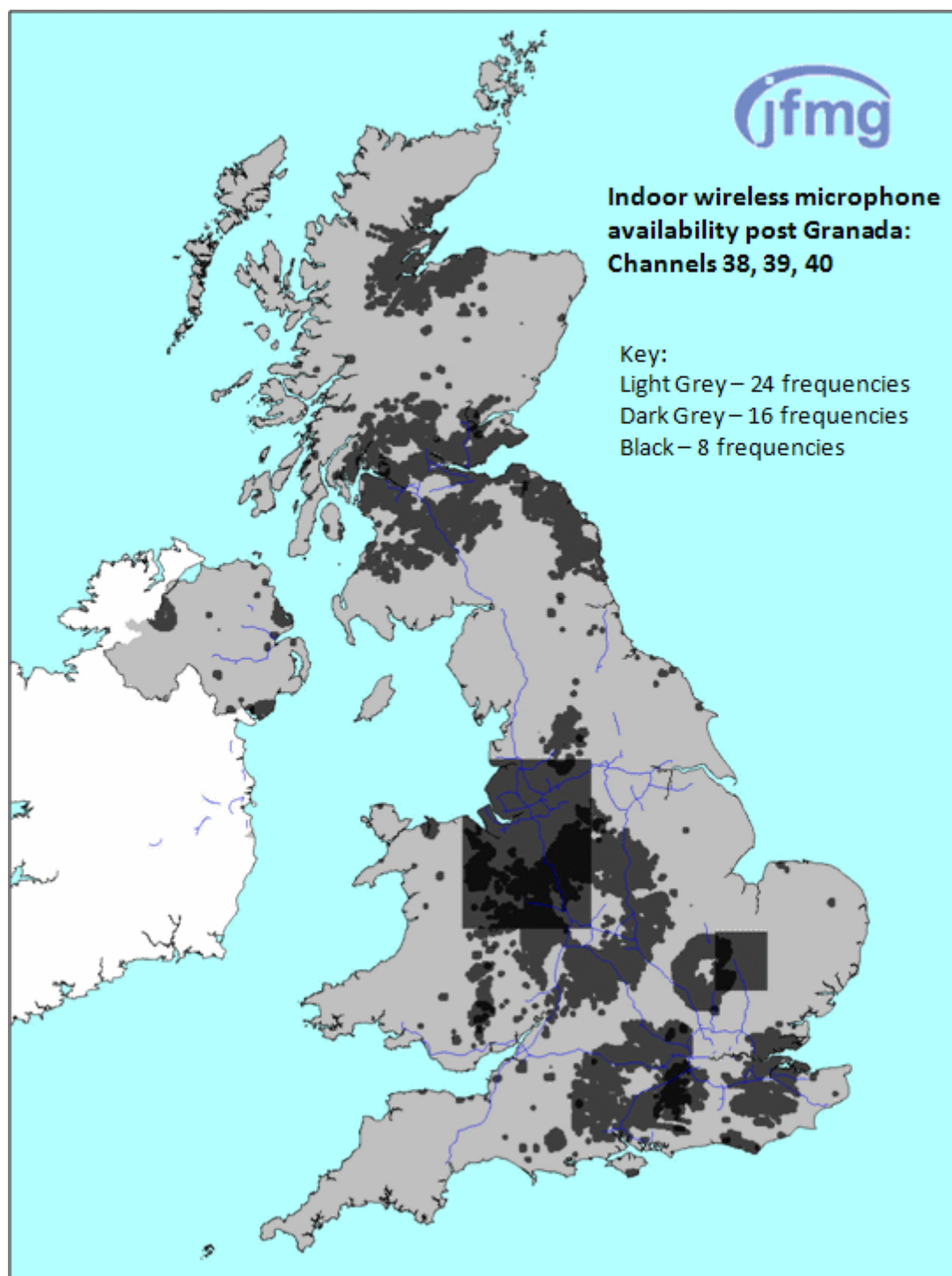
# Availability of spectrum in channels 38-40

- A7.1 Channel 38 will not be available on a UK-wide basis until 1 January 2012. A number of stakeholders benefit from the flexibility of being able to move around the UK using only one set of equipment. These users have informed us that channel 38 will not be an effective substitute for channel 69 until that UK-wide coverage is available. This is particularly the case because, even with the newly reduced radioastronomy protection zones, parts of Manchester, Liverpool, other urban areas in the North West of England, and Cambridge are unavailable for PMSE use.
- A7.2 With that in mind, we stated that we would investigate whether there was any scope for an alternative tuning range, probably incorporating channel 38, which would enhance the coverage of equipment so that it could more closely replicate the key characteristics of channel 69 which we identified in our 800 MHz consultation document, namely:
- the ability to accommodate the use of at least eight (to date analogue) wireless microphones;
  - relative freedom from interference; and
  - UK-wide coverage.
- A7.3 In assessing likely tuning ranges which could approach the utility of channel 69, we were mindful that it would be preferable for all of the favoured spectrum range to remain usable after 2012, so that there would be no frequencies that would be rendered unusable after DSO had taken place. We also focussed on a tuning range that was no more than three television channels (24 MHz), in keeping with the common tuning range of equipment currently on the market.
- A7.4 Our assessment shows that, from the end of 2009, by far the best option for PMSE users would be equipment which tunes from channels 38-40. Indeed after the Granada region completes switchover on 3 December 2009, the utility of channels 38-40 will be vastly improved from the current position. This is because of the increased availability of channels 39 and 40, including the ability to use this spectrum within much of the radioastronomy protection zones around both Jodrell Bank and Cambridge.
- A7.5 After 3 December 2009, channels 38-40 will provide UK-wide coverage for indoor PMSE use, relatively free from harmful interference, and with a minimum capacity to deploy eight wireless microphones (10 mW only). This fulfils the key criteria that we set out in our 800 MHz consultation and confirmed in our 800 MHz statement.
- A7.6 On current assumptions, outdoor use will be slightly more constrained in that there are a small number of locations, primarily in parts of Staffordshire and Cambridgeshire, where there will be no spectrum availability. However, most locations will be able to offer a minimum bandwidth to support the use of three wireless microphones. Of these locations, the majority of locations will support the use of either six or nine 10 mW devices.
- A7.7 We set out the extent of coverage of channels 38-40 in Figure 1 and Figure 2 below (showing indoor and outdoor availability of spectrum). We emphasise that technical

work is still ongoing on defining the availability of channels 38-40. We expect to revise this map shortly, the effect of which will be to improve the availability of spectrum for both indoor and outdoor use. For example, the exclusion zone in the West Midlands region should show some limited outdoor availability in the conurbations centred around Birmingham.

- A7.8 The picture will also improve as switchover progresses on a region by region basis.
- A7.9 This option also has the advantage of equipment not losing the use of any frequencies as a result of switchover because we have confirmed that channels 38 will be made available for longer-term PMSE use, whilst channels 39 and 40 will be used by DTT and will therefore be available to PMSE after 2012 on an interleaved basis.
- A7.10 In light of some responses to the 800 MHz consultation which highlighted the importance that PMSE users place on shared licence access to channel 69 (whereby set frequencies are put aside for PMSE use without the need for prior coordination), we have addressed, in section 7, how best to license channels 39 and 40 to ensure that they can best fulfil the needs of the sector.

**Figure 2. Indoor availability of spectrum for 10 mW wireless microphones in channel 38-40 from 3 December 2009**



**Figure 3. Outdoor availability of spectrum for 10 mW wireless microphones in channel 38-40 from 3 December 2009**

