



**Digital Dividend Review: clearing the 800 MHz band**

**British Entertainment Industry Radio Group (BEIRG)**

**Funding for Programme Making and Special Events**

**Consultation Response**

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## **Foreword**

The Programme Making and Special Events (PMSE) sector is responsible for both content production and content delivery for live and recorded entertainment. It plays a critical role in the ongoing success of the £15 billion pa British Entertainment Industry. It consists of a wide and diverse community, both professional and amateur, including broadcasters, theatres, large event organisers, freelance engineers, rental companies, schools and houses of worship, all of which use spectrum to relay sound and/or picture data across relatively short distances. This allows, for example, wireless microphones to be used on stage in musical theatre, and at events such as Live 8 and the Olympics.

These wireless technologies are used extensively in the production of entertainment content, to the extent that they are either essential or add significant value. As an Independent Report commissioned by Ofcom notes, there are productions that are simply 'not possible without using wireless technology'<sup>1</sup>. For example, 'many outside broadcasting events, such as golf tournaments, can only be linked back to the broadcast studio by means of wireless, and modern musicals would be impractical if all the actors had to trail a lead to their microphone instead of using radio microphones'<sup>2</sup>.

The British Entertainment Industry Radio Group (BEIRG) is an independent, not-for-profit association that works for the benefit of all those who produce, show, distribute and ultimately consume content made using radio spectrum in the UK. Productions that depend on radio spectrum include TV, Film, Sport, Theatre, Music, Newsgathering, political and corporate events, and many others. In the context of the Digital Dividend Review (DDR), BEIRG campaigns for the maintenance and certainty of Programme Making and Special Events (PMSE) access to spectrum that is interference-free and sufficient in terms of quality, bandwidth and continuity at reasonable prices. Without these guarantees, UK-produced content that relies on the use of radio microphones and other short-range wireless devices will suffer, or indeed become impossible, at the very beginning of the value chain – where the audio portion of content is captured.

Radio microphones, in-ear monitor systems and talkback applications operate within the frequency bands reserved UK-wide for analogue television broadcasts. Analogue terrestrial television signals in the UK are currently being 'switched off' and replaced with digital signals in a process known as 'digital switchover' (DSO). Digital broadcasting is more efficient than analogue so less frequency bands need to be reserved UK-wide for digital television broadcasts than was the case for analogue. Those frequencies that were used for analogue television broadcasts but will not be used for digital television broadcasts are said to be 'freed up' by DSO and are referred to as the 'digital dividend'.

However, it is inaccurate and misleading to say that these frequency bands are being 'freed up' as a result of DSO; in addition to analogue TV broadcasts, the vast majority of radio microphones and a significant percentage of In Ear Monitors (IEMs) and talkback applications in the UK operate in these bands. Ofcom has nonetheless decided that these bands will be auctioned and released for new uses once DSO is completed across the UK<sup>3</sup>. As Ofcom has acknowledged, the PMSE sector cannot compete at auction with Mobile Network Operators (MNOs) and other potential bidders and their equipment cannot co-exist with these alternative uses, all PMSE equipment that operates in these bands will be either rendered entirely redundant (unusable) or require extensive expensive modification as a result of these changes.

This consultation is not about spectrum availability per se, but about the volume and value of PMSE equipment<sup>4</sup> that will be rendered redundant as a result of spectrum planning changes in the UHF band and how the PMSE sector will be affected if it has to bear the cost of replacing this equipment.

<sup>1</sup> <http://www.ofcom.org.uk/research/technology/research/sectorstudies/entertainment/entertain2028.pdf> section 7.1

<sup>2</sup> <http://www.ofcom.org.uk/research/technology/research/sectorstudies/entertainment/entertain2028.pdf> section 7.1

<sup>3</sup> Although the Government might permit use by the winning bidders from 1<sup>st</sup> January 2012

<sup>4</sup> Radio microphones, in-ear monitor systems and talkback

Judging from the following statements made by Government, we would hope that it takes the arguments laid out in this document into account, particularly as ensuring the continued existence of the PMSE sector as we know it, and the products and services it provides, requires sufficient funding to allow it to relocate from the frequencies it currently uses:

- ‘The strength of Britain’s film industry is a source of pride, and employment. We will continue to make the UK the right place to invest in film production’<sup>5</sup>.
- ‘It goes without saying – the small music businesses are vital, not only to the industry itself, but also to our culture and economy. The music industry contributes £5 billion each year to the UK’s economy and employs 130,000 people’<sup>6</sup>.
- ‘The digital economy has tremendous potential for the creation of new jobs and new growth. We need to ensure that the conditions are in place to enable the knowledge-based and creative industries to thrive as we emerge from the current downturn’<sup>7</sup>. ‘Modern British manufacturing matters to our future. I’d go further – it is indispensable for our future. Which is why I am determined that this Government should continue to play its part in putting in place the conditions for our future success’<sup>8</sup>. ‘Opportunity and impact. Those will be the criteria which the Government will refer to as we develop our industrial activism’<sup>9</sup>.
- ‘In addition to being a financial services capital of the world, we should aim to be a global centre for the creative industries’<sup>10</sup>. ‘This work to incorporate the creative industries into mainstream economic thinking has been studied and copied worldwide, and the Budget signalled a new phase of Industrial Activism joining up the work of BIS, DCMS, DWP and DCSF’<sup>11</sup>. ‘A driving consequence of the changes in our communications infrastructure capability, mass participation in Digital Britain, widespread adoption and use of new digital devices and services described in the previous chapters will be a flowering of distribution, production and creation of all sorts of content.’<sup>12</sup> ‘The Digital World will continue to rely upon the development of these same core creative skills, and many of the basic building blocks in which people develop and enjoy creative content live – our museums, libraries, arts centres, theatres and music venues – look set to thrive in the Digital Age’<sup>13</sup>.

## **Introduction**

BEIRG fully recognises that it is Ofcom’s duty to promote the efficient use of spectrum and that any decisions will need to be made with this duty in mind. BEIRG strongly believes that the proposals put forward in the consultation document do not promote this objective and therefore do not fulfil this duty to the extent that alternative measures would. This document sets out what, in BEIRG’s view, would both maximise the efficient use of spectrum and help to ensure that the PMSE sector can continue to provide its products and services to the citizens and consumers of the UK, and indeed the world, with as little disruption as possible.

As Ofcom will appreciate, determining the criteria for providing funding for PMSE is an extremely complicated and emotive issue, particularly as the PMSE sector is such a wide and diverse community with different needs and these decisions will affect the livelihoods of many. Due to these complexities, putting the arguments down on paper in a manner that is clear and easily understood is not always easy. In light of this, we trust that Ofcom will be patient and diligent in digesting the arguments and proposed measures laid out.

<sup>5</sup> [http://news.bbc.co.uk/1/shared/bsp/hi/pdfs/13\\_04\\_05\\_labour\\_manifesto.pdf](http://news.bbc.co.uk/1/shared/bsp/hi/pdfs/13_04_05_labour_manifesto.pdf) page 99

<sup>6</sup> [http://www.culture.gov.uk/reference\\_library/media\\_releases/3046.aspx](http://www.culture.gov.uk/reference_library/media_releases/3046.aspx)

<sup>7</sup> [http://www.culture.gov.uk/reference\\_library/media\\_releases/6312.aspx](http://www.culture.gov.uk/reference_library/media_releases/6312.aspx)

<sup>8</sup> <http://www.berr.gov.uk/aboutus/ministerialteam/Speeches/page52427.html>

<sup>9</sup> <http://www.berr.gov.uk/aboutus/ministerialteam/Speeches/page52427.html>

<sup>10</sup> [http://www.culture.gov.uk/images/publications/chpt4\\_digitalbritain-finalreport-jun09.pdf](http://www.culture.gov.uk/images/publications/chpt4_digitalbritain-finalreport-jun09.pdf)

<sup>11</sup> [http://www.culture.gov.uk/images/publications/chpt4\\_digitalbritain-finalreport-jun09.pdf](http://www.culture.gov.uk/images/publications/chpt4_digitalbritain-finalreport-jun09.pdf)

<sup>12</sup> [http://www.culture.gov.uk/images/publications/chpt4\\_digitalbritain-finalreport-jun09.pdf](http://www.culture.gov.uk/images/publications/chpt4_digitalbritain-finalreport-jun09.pdf)

<sup>13</sup> [http://www.culture.gov.uk/images/publications/chpt4\\_digitalbritain-finalreport-jun09.pdf](http://www.culture.gov.uk/images/publications/chpt4_digitalbritain-finalreport-jun09.pdf)

1. Before it is possible to determine how Ofcom's proposals for funding need to be changed or adjusted to make the most efficient use of spectrum, it is necessary to determine the conditions that are required in order to make efficient use of spectrum in practice in the context of migrating PMSE from those frequencies it currently uses to those it will use in the future.
2. Ofcom has decided that channels 31-37 and 61-69 will be cleared of PMSE and released for new services. Ofcom has also decided that PMSE will be able to use channel 38 and the interleaved spectrum in channels 21-30 and 39-60 instead, once DSO is completed across the UK. In order to make most efficient use of all of these channels, which comprise the majority of the UK's Digital Dividend, the PMSE sector must be able to migrate from the frequencies that it currently uses into replacement bands in a way that does not adversely affect their ability to provide a wide range of services, vital to the UK population, including news gathering, political broadcasting, sports, film, music, theatre and many other entertainment related events & productions.
3. In order to achieve this, all equipment that operates in the cleared spectrum must be replaced with equipment that will meet the current operational needs of all PMSE end users. For this to be possible, the aforementioned replacement equipment must be available in sufficient quantities that users can afford to buy. In turn, this will require a commercial imperative for manufacturers to develop and produce the equipment for the mass market.
4. For the conditions in paragraph (3) to be met, channel 38 and the post-DSO interleaved spectrum must be available on the same basis as channel 69 and pre-DSO interleaved spectrum are now. (Conversely, if the replacement frequencies are not available on the same basis, equipment that operates in these bands, if it existed, would not meet the operational needs of all PMSE users<sup>14</sup>).
5. There are two distinct timescales involved in the migration process:
  - a. The time it will take for the requisite equipment to be developed and produced in sufficient quantities.
  - b. The time it will take for this equipment to penetrate the market and for all users of the cleared spectrum to re-equip.
6. The shorter these timescales are, the more efficiently the spectrum will be used. The timescales involved are determined by whether the conditions laid out in paragraphs (3) and (4) are met. The greater the extent to which these conditions are met (for example, the more closely the availability of channel 38 mirrors that of channel 69), the shorter the timescales involved.
7. As (a) fulfilling the conditions laid out in paragraphs (3) and (4) will maximise PMSE use of channel 38 and the post-DSO interleaved spectrum as soon as possible and (b) maximising PMSE use of channel 38 and the post-DSO interleaved spectrum as soon as possible promotes the efficient use of this spectrum, Ofcom should take all necessary steps to ensure that the conditions laid out in (3) and (4) are fulfilled in accordance with their duties and objectives. Those necessary steps are the following:
  - a. Ensure that funding provided to those eligible covers the full costs of replacing all existing equipment that will be rendered redundant as a result of DSO/DDR with like-for-like alternatives, including that which tunes to channels 31-37 and 61-68 as well as 69.
  - b. Maximise the availability of channel 38 as soon as possible (as availability of channel 38 is increased, it will become more suitable to meet PMSE users operational needs)

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<sup>14</sup> See answer to question 4 for further explanation

- c. Ensure that there is a reasonable period of dual like-for-like availability of channels 69 and 38.
- d. Provide definitive information about which interleaved frequencies will be available after DSO as soon as possible.
- e. Provide funding as soon as claims are approved (to facilitate early migration to channel 38 and/or the post-DSO interleaved spectrum for those PMSE users for which this is convenient).
- f. Extend the cut-off date for eligibility until replacement spectrum is available on a like for like basis (subject to providing evidence of the compelling reasons for making the purchase).
- g. Equipment that operates in the cleared spectrum must not be surrendered until replacement equipment can be deployed in the same way.

The rest of this document, including the executive summary, explains why these steps are necessary.

### **Executive summary**

Funding provided by the Government must cover the full costs of replacing all existing equipment that will be rendered redundant as a result of DSO/DDR with like-for-like alternatives, including that which tunes to channels 31-37 and 61-68 as well as 69 for the following reasons:

- It will facilitate more efficient use of the interleaved spectrum and channel 38, as is consistent with Ofcom's statutory duties and objectives:
  - It will increase the likelihood that users will be able to purchase channel 38 equipment, in good time to meet their operational needs and so avoid any disruption that will adversely affect the PMSE industry and its ongoing ability to provide a wide range of services.
  - It will help to facilitate PMSE users' participation in a market-based approach to spectrum by encouraging early migration to a band that will be awarded to the band manager
  - It will promote the optimal use of spectrum as it will encourage successful clearing of the 800 MHz band for alternative uses; and
  - It will help to avoid the risks of regulatory and market failure as it will reduce the likelihood and extent of equipment manufacturers experiencing order backlogs.
- Like-for-like re-equipping costs would be unaffordable for many equipment owners because the very limited alternative equipment that is currently available is prohibitively expensive and there has been no opportunity to manage the transition over a reasonable period of time.
- If it does not, all productions that depend on use of PMSE technologies will be under severe threat as a consequence of
  - re-equipping costs being unaffordable for many; and
  - the nature of the PMSE industry, particularly the way in which the UK's pool of equipment is held and supplied to end-users.
- 'Residual equipment value' does not apply to the PMSE sector in the same way as it might to other industries and business models
- This funding model will be much simpler, easier to administer and involve significantly less bureaucratic burden than basing it on 'residual value'.

- It would not be morally right for the PMSE sector to be financially penalised by being forced to relocate from the frequencies it currently uses.
- The Government should redress its failure to appreciate and resolve the negative consequences of DSO for PMSE that were drawn to its attention back in 2002 by ensuring that the sector is not financially penalised by the relocation.
- The Government should redress the unintended consequences of the Communications Act 2003 by ensuring that the sector is not financially penalised by the relocation.
- The Government should not allow the PMSE sector to be penalised as a result of antiquated legislative principles that are unsuitable for today's spectrum management regime.

**Why funding provided by the Government must cover the full costs of replacing all existing equipment that will be rendered redundant as a result of DSO/DDR with like-for-like alternatives, including that which tunes to channels 31-37 and 61-68 as well as 69.**

The PMSE sector is effectively being evicted from the frequencies its equipment operates on in order to clear the spectrum bands so they can be released for new services. The spectrum will be sold via auction and any proceeds will go to HM Treasury.

As a consequence of the spectrum re-allocation, tens of millions of pounds worth of equipment belonging to churches, schools, community and voluntary organisations, musicians, freelance sound engineers, theatres, rental houses, broadcasters, studios, producers and other events organisers and production companies will be rendered unusable. If the PMSE sector's contribution to the social, cultural and economic fabric of the UK is to remain, the equipment that will be rendered redundant needs to be replaced with equipment that operates on different frequencies.

For the reasons set out below, the PMSE sector must not be forced to bear the costs associated with their 'relocation'. Rather, the funding provided by the Government must cover the full costs of replacing existing equipment with like-for-like alternatives (that do the same job).

**1) Like-for-like re-equipping costs would be unaffordable for many equipment owners because alternative equipment is more expensive and there has been no opportunity to manage the transition over a period of time.**

- a. Currently, there is no mass-produced or reasonably priced equipment that is tuneable to channel 38; it is high-end and expensive, hence potentially unaffordable without adequate funding provided. For example, Ofcom are assuming that equipment with a 24MHz tuning range that encompasses channels 38-40 is equivalent to equipment that tunes to channel 69. For many users, they can only afford to invest a certain amount and only need to use 8 or so frequencies. Equipment that tunes to 38-40 inclusive is much more expensive than channel 69 equipment with an 8 MHz tuning range. This means that only providing the residual value of channel 69 equipment in the funding package will only entitle equipment owners to a small fraction of the amount required to actually replace the equipment. As Ofcom have said, 'If channels 67-70 were not available then the majority of community PMSE equipment would need to be replaced. For lower frequencies, equipment is still readily available, but at higher prices and not in the same volumes as for the higher frequencies'<sup>15</sup>. As Ofcom have also accepted, 'a high replacement value for equipment could make it more difficult for PMSE users to move to other spectrum bands and so increase the likelihood of their ceasing activities if the digital dividend were not available for PMSE use'<sup>16</sup>. If this is to be remedied, manufacturers would need a commercial imperative. This would require some

<sup>15</sup> [http://www.ofcom.org.uk/consult/condocs/ddr/ddr\\_annexed.pdf](http://www.ofcom.org.uk/consult/condocs/ddr/ddr_annexed.pdf) A8.21

<sup>16</sup> <http://www.ofcom.org.uk/consult/condocs/pmse/pmse.pdf> 4,23

guarantees of demand, which is in turn conditional on end-users' and suppliers' ability to pay in addition to straightforward spectrum availability. Ability to pay is contingent on the extent of funding provided.

- b. Since the PMSE sector was notified about the threat to its frequencies, users have had (and still have) no option but to invest in equipment that is not future-proofed in order to continue their businesses or productions. In some cases, entire inventories have been built-up that will not be useable in the UK post-DSO. The reason for this is that Ofcom have not provided certainty over which frequencies will definitely be available for PMSE post-DSO. As a consequence of the inability to plan for change and manage the transition, equipment owners will need to replace entire inventories that have not been amortised<sup>17</sup> in a very short space of time, a year and a half in the case of interleaved users<sup>18</sup> and overnight<sup>19</sup> in the case of many channel 69 users. This would be financially unviable for many equipment owners.
  - i. In response to the suggestion that PMSE users need to know which frequencies will be available for use in the digital interleaved in good time for DSO, Ofcom stated that 'we are aware of the importance of the PMSE community having sufficient time to plan for DSO and will be publishing a list of available frequencies shortly'<sup>20</sup>. Ofcom acknowledged that representative bodies 'expressed concerns that any delay in providing information on the frequencies available for PMSE after DSO would lead to difficulties in acquiring a sufficient quantity of suitable equipment'<sup>21</sup>. However, the relevant information has not been provided and this has led to difficulties in acquiring a sufficient quantity of suitable equipment. Indeed, the PMSE sector has been forced to continue to invest in equipment that is not future-proofed, hence exacerbating the requirement for a like-for-like funding package.
  - ii. In response to the argument that the PMSE sector must be given sufficient time to amortise the value of current equipment that will become redundant under current plans, Ofcom said that they 'note the concerns that the PMSE sector has (with regard to) not realising the full value of its equipment and will consider these in the context of the notice period provided to PMSE users in respect of DSO'<sup>22</sup>. However, a period of notice, however long, is irrelevant if definitive confirmation of replacement frequencies is not provided. Again, as Ofcom has yet to provide a definitive list of such frequencies and will now not do so until mid-2010, the PMSE sector has been forced to continue to invest in equipment that will be rendered redundant post-DSO.

**2) As a consequence of re-equipping costs being unaffordable for many, and due to the nature of the PMSE industry, in particular the way in which the UK's pool of equipment is held and supplied to end-users, all productions that depend on it will be under severe threat (unless the Government covers the full costs of replacing existing equipment with like-for-like alternatives). In this regard, it is useful to make the distinction between professional and non-professional users.**

- a. For non-professional users such as schools and churches who saw their equipment purchases as long-term investments, it may not be possible to meet the costs of replacing their equipment prematurely with more expensive alternatives. Ofcom themselves have stated that 'the costs of replacing equipment could be difficult for

<sup>17</sup> Equipment will be new in some cases

<sup>18</sup> I.e. from mid-2010 when final white space maps are due to be published

<sup>19</sup> I.e. From point at which channel 38 is cleared of radioastronomy. For some, channel 38 will not offer a suitable alternative to channel 69 until DSO is complete and there are no usability restrictions from analogue television broadcasts in TV bands 37 and 39.

<sup>20</sup> <http://www.ofcom.org.uk/consult/condocs/ddr/statement/ddrannex.pdf> A3.146

<sup>21</sup> <http://www.ofcom.org.uk/consult/condocs/ddr/statement/ddrannex.pdf> A3.39

<sup>22</sup> <http://www.ofcom.org.uk/consult/condocs/ddr/statement/ddrannex.pdf> A3.152

some of the smallest organisations to meet<sup>23</sup>. This group of end-users who own their equipment will simply cease to undertake PMSE activity (and correspondingly cease to use the spectrum).

- i. In this regard, it is also worth noting that Ofcom have stated that ‘there is a large number of community PMSE users, running into the tens of thousands, whose use is largely local and includes commercial, semi-commercial and community activities. They have equipment and established patterns of use that may be costly for them to change. Without having conducted formal engagement with this user group, we expect that their priority is to be able to continue to do what they do now, without incurring significant additional costs<sup>24</sup>.
- b. The situation for professional PMSE is different and more complicated. The ownership of UK’s pool of equipment for professional use is to a significant extent concentrated in the hands of rental houses and freelance engineers and then supplied to end-users when required. Indeed, the main trend impacting the take-up by the vending/hiring community is an increase in outsourcing production and the trend away from investing in equipment. If these rental houses and freelance engineers cannot afford to replace their existing equipment with like-for-like alternatives, the ability of the end-users to produce their content will be severely jeopardised (unless they invest in equipment themselves – but for reasons explained below, this may not prove viable). This problem is exacerbated by the fact that very few users are able to directly internalise the benefit of deploying PMSE equipment in the form of greater revenue because most of the PMSE end products and services are not paid for at the point of consumption. Consumers are not used to paying by programme or for incremental improvements in programming. Most consumers, where they pay at all, pay for a bundled package and are not used to valuing the cost of an individual programme, let alone a particular aspect of a programme.
- i. The professional broadcasting, programme-making and event industry has embraced outsourcing and moved away from investing in equipment, partly as a way of reducing costs. Larger users often use subcontractors for a significant proportion of their production and the subcontractors in turn use a combination of their own kit and hired equipment. This has created a highly competitive market for programme production<sup>25</sup>.
  - ii. Within event, programme and film production, many sound specialists are employed on a freelance basis. Many of these specialists have expertise that is suited to a given event or programme type. For many small events, freelancers are expected to provide a service, including provision of their own equipment. Typical rates are about £300 to £600 per day for technicians who bring in their own equipment and also get the necessary licences from JFMG. Freelancers are extremely cost-conscious. Lack of sufficient funding to allow freelancers to replace redundant equipment with like-for-like alternatives will impact on them most heavily; it will restrict their ability to offer a service bundling equipment provision and expertise. Consequently, there will be a lack of service providers required to meet the needs of the production companies and end-users themselves, thus resulting in a significant decrease in programme making, with associated job losses, and the value of the products themselves.
  - iii. Within the theatre industry, spotting hit musicals is notoriously difficult and many musicals are abandoned before unacceptable losses accrue. In

<sup>23</sup> [http://www.ofcom.org.uk/consult/condocs/ddr/ddr\\_annexed.pdf](http://www.ofcom.org.uk/consult/condocs/ddr/ddr_annexed.pdf) A8.41

<sup>24</sup> [http://www.ofcom.org.uk/consult/condocs/ddr/ddr\\_annexed.pdf](http://www.ofcom.org.uk/consult/condocs/ddr/ddr_annexed.pdf) A8.28

<sup>25</sup> [http://www.ofcom.org.uk/consult/condocs/ddr/reports/quotient\\_associates.pdf](http://www.ofcom.org.uk/consult/condocs/ddr/reports/quotient_associates.pdf) page 45

addition, maintaining specialist radio equipment is not a core function. For these reasons, hire companies have arisen that supply and maintain radio equipment on a long and short-term basis, thus reducing the commercial exposure by avoiding high up-front costs. In addition, it is much easier to have operating budgets approved compared to capital expenditure budgets. Theatre is a notoriously labour intensive industry with little scope for cost cutting without affecting the finished product. Correspondingly, theatre is always under financial pressure. Producers are therefore extremely reluctant to invest in equipment directly because of the risks involved. Consequently, the disappearance of rental companies resulting from lack of ability to replace their equipment is likely to result in a significant reduction in musicals and other commercial users, with the associated loss of revenue, employment and wider cultural benefits to citizens and consumers of the UK.

- iv. In general, commercial users tend to focus on reducing risks, and budget on a per-production basis. These users therefore tend to hire equipment. For example, smaller cost-conscious users who have occasional use for wireless equipment prefer to hire equipment<sup>26</sup>. This reduces the cost of maintenance and they can shop around for the most appropriate piece of equipment. As for the theatre industry, it is much easier to have operating budgets approved compared to capital expenditure budgets.
  - v. The two aspects of risk reduction and subcontracting non-core equipment maintenance have established a competitive hire and freelance sector in the UK. Simultaneously, the availability for hire and a pool of freelance operators has reduced the barriers to programme making in the UK. This has further increased competition in programme making in the UK.
- c. In view of the facts set out in the section above, it becomes clear that, if freelancers and rental houses are forced out of business because they cannot afford to replace their equipment inventories, programme and event production in the UK will be under severe threat and competition within the equipment hire and freelance sectors will be significantly diminished or disappear completely, along with the associated employment. It might be argued that, in this case, the end-users would invest in new equipment directly. But for many professional end-users, this option is likely to be very difficult or unviable, leading to severe restrictions in the number of and size of productions which deploy PMSE technologies, with knock-on employment effects. These arguments apply to end-users who own or rent existing equipment alike.
- i. If end-users were forced to invest in equipment up-front, their commercial exposure would be increased, potentially to the extent that investment would not be worth the risk (again, it is much easier to have operating budgets approved compared to capital expenditure budgets).
  - ii. It is unlikely that it will be possible to recoup investment outlay by passing costs onto consumers, at least not until the medium term. As explained above, very few users are able to directly internalise the benefit of deploying PMSE equipment in the form of greater revenue because most of the PMSE end products and services are not paid for at the point of consumption. It would take considerable time for information on the value generated by PMSE equipment use to emerge and for business plans and strategies to be adjusted accordingly. The full or partial cost of re-equipping imposed over a very short space of time and corresponding adjustments involved are likely to prove unfeasible, especially for the more cost-sensitive end-users such as theatre and musical productions.

<sup>26</sup> [http://www.ofcom.org.uk/consult/condocs/ddr/reports/quotient\\_associates.pdf](http://www.ofcom.org.uk/consult/condocs/ddr/reports/quotient_associates.pdf) 6.5

- iii. End-users would have to invest in expertise as well as equipment, and given the profit margin that many already work on, these are additional costs that many would simply be unable to meet.
- iv. Use of the UK's pool of equipment would neither be as flexible nor efficient – much more equipment would remain unused in-between productions than it is now.
- v. Rental companies and other equipment suppliers are able to buy equipment for less because they order in bulk. This would be more difficult for end-users with smaller orders and hence the scope for cost reduction is dramatically reduced.

### 3) 'Residual equipment value' does not apply to the PMSE sector in the same way as it might to other industries and business models

- a. Ofcom's understanding of the duration of 'useable life' and the use-value that functioning equipment retains is deficient. The full lifecycle of equipment from the date of purchase should not be defined simply by the time it takes to amortise its value. Ofcom must understand that PMSE owners of the equipment need to generate returns on their investment (surpluses). But more importantly, the lifecycle of the equipment is how long it operates before it fails beyond economic repair and needs to be replaced. Wireless microphones can last for much longer than 10 years and they retain use-value up until the point at which they need replacing; maximum depreciations are far less than the lifespan of the product. Therefore, full financial assistance must be provided to replace any equipment with like-for-like alternatives. Moreover, since Ofcom cannot predict how long that wireless microphone would continue to function if PMSE were not evicted, then the full cost of replacing that equipment should be covered by the new licensees/Government. At present, Ofcom's assumed duration of the lifecycle of the equipment is conservative and consequently will therefore unfairly penalise those who look after their equipment, or specifically buy the expensive highly-engineered product, which is built to last for at least 15 years.
- b. To explain this further, the depreciation applied to buildings is a helpful analogy. Whilst there are different types and ways of calculating depreciation (eg, depreciation methods based on time – straight line method, declining balance method, sum-of-the-years'-digits method – and depreciation based on use), sixty years is a typical (although not universal) period of economic use for buildings and roads.
  - i. The Government's code for sustainable homes states that 'materials and components are presented in their typical, as-built elemental form. They are compared on a like-for-like basis, as specifications that fulfil similar functions; important variables such as the mass of a material required to fulfil a particular function are taken into account. The specifications are compared over a 60-year study period. Included in this is any repair and maintenance over the 60-year life, and impacts relating to an assumed dismantling/demolition of the building at the end of its life which may occur at any point after 60 years'<sup>27</sup>.
  - ii. It states the following in a paper by the Chartered Institute of Public Finance and Accountancy: 'the year 1 expenditure is capitalised and the whole asset value depreciated over the following 60 year period. The expenditure in year 21 to renew the top layers is not capitalised as this simply restores the asset

<sup>27</sup> [http://www.planningportal.gov.uk/uploads/code\\_for\\_sust\\_homes.pdf](http://www.planningportal.gov.uk/uploads/code_for_sust_homes.pdf), 2008, p.3

to the condition anticipated by the useful economic life (60 years) assumed in the depreciation policy<sup>28</sup>.

**4) A funding package that covers the full costs of replacing all existing equipment that will be rendered redundant as a result of DSO/DDR with like-for-like alternatives will be much simpler, easier to administer and involve significantly less bureaucratic burden than basing it on 'residual value'.**

**5) Providing sufficient funding that allows equipment-owners to replace affected kit with genuine like-for-like alternatives will facilitate more efficient use of the interleaved spectrum and channel 38, as is consistent with Ofcom's statutory duties and objectives.**

- a. Section 152 (5) of the Communications Act 2003 states that 'OFCOM may make a grant to any person if, in their opinion, the making of the grant is likely to promote (a) the efficient use in the United Kingdom of the electro-magnetic spectrum for wireless telegraphy; or (b) the efficient management of that use'. Grants are made on such terms and conditions as OFCOM consider appropriate. The consent of HM Treasury is required in order for Ofcom to make such a grant and for the terms and conditions on which such a grant is made.
- i. Up until this point, it is our understanding that Ofcom has justified the provision of funding to those with equipment that operates in channel 69 on the basis that the clearance of this channel and release for new uses will promote more efficient use of the electro-magnetic spectrum, and the 800 MHz band in particular. We believe that this interpretation is unduly and unreasonably narrow. Instead, Ofcom should be providing grants to PMSE equipment owners on the basis that funding the full costs of replacing all PMSE equipment affected by the DDR/DSO with genuine like-for-like replacement equipment will promote efficient use of the spectrum to be used for these services post-DSO, in particular channel 38 and the interleaved spectrum.
  - ii. If wireless telegraphy applications are not deployed in channel 38 or the interleaved spectrum, then these bands will not be used. A band lying unused is inefficient use of spectrum par excellence. The less channel 38 and the interleaved spectrum are used for wireless telegraphy applications, the less efficiently they will be used.
  - iii. Ofcom have confirmed in the second band manager consultation that the opportunity cost of awarding the interleaved spectrum to a band manager with obligations to PMSE, and hence for PMSE use, is zero. Therefore, PMSE is clearly the most efficient user of the interleaved spectrum.
  - iv. PMSE can be said to use the interleaved spectrum more efficiently as:
    1. PMSE applications are deployed more frequently
    2. On a greater range of frequencies
    3. In a greater number of locations
  - v. In order to maximise the efficient use of the interleaved spectrum and channel 38 by PMSE, Ofcom and the Government must ensure that users are in a position to deploy relevant equipment in the way outlined in point (iv) above. To do this, Ofcom must maximise the funds available to equipment owners so they can replace their existing equipment with that which can best exploit channel 38 and the post-DSO configuration of interleaved spectrum.

<sup>28</sup> [http://www.cipfa.org.uk/PT/infrastructure/download/final\\_report\\_G.pdf](http://www.cipfa.org.uk/PT/infrastructure/download/final_report_G.pdf)

If sufficient funds are provided, the combination of demand (which is proven) with the ability to pay will provide manufacturers with a commercial imperative to produce more spectrally efficient and cost effective equipment for the mass market. Conversely, and as explained above, if the funding package covers anything less than the full cost of purchasing like-for-like equipment, many will not be able to afford to re-equip to the extent necessary, and if they do buy new equipment, it will be relatively spectrally inefficient and expensive. The result will be less PMSE activity, less spectrum use and less efficient use of spectrum. Of course, these arguments can only be fully understood in conjunction with section 3 above.

- b. Under Section 154 of the Communications Act 2003, it is Ofcom's duty, in carrying out their functions under the enactments relating to the management of the radio spectrum, to have regard, in particular, to (a) the extent to which the electro-magnetic spectrum is available for use, or further use, for wireless telegraphy; (b) the demand for use of that spectrum for wireless telegraphy; and (c) the demand that is likely to arise in future for the use of that spectrum for wireless telegraphy.
- i. It is worth noting here that demand for the use of PMSE applications is well established and growing rapidly in order to meet the demand for higher production values. This growth in demand will continue. If funding provided is not sufficient for equipment owners to purchase like-for-like replacement equipment, supply of such equipment will not be able to meet this demand.
  - ii. As Ofcom acknowledge, PMSE 'already uses interleaved spectrum on a large scale'<sup>29</sup>. A study commissioned by Ofcom in relation to the DDR from Sagentia forecast year-on-year increases of 30% in the demand for PMSE amongst community organisations, and 12% in demand from small-scale commercial organisations. The take-up of PMSE equipment for both uses was forecast to increase by 25% between 2006 and 2009, and 15% between 2010 and 2012<sup>30</sup>. Demand is expected to grow over the next 20 years<sup>31</sup>. For many productions, there are simply no alternatives to use of these technologies.
  - iii. For example, typical use in major theatres is in the range of 50-100 indoor radio microphones, plus some talkback and IEM<sup>32</sup>. Where analogue microphones are used, they are generally used at 8-12 per TV band; thus this use may require 10 or more TV channels. The spectral demands of touring musicals or theatre productions, rock and pop and other concerts are similar to those of West End theatres. A typical touring band would use an average of 30-40 radio microphones/instrument systems, although, according to the Sagentia Report<sup>33</sup>, one high-profile touring show used around 100 radio microphones. At the other end of the scale, as the Sagentia Report states, 'social users have predominantly low usage, i.e. an average of 4 radio microphones within 1 TV channel (Ch 69) at locations spread throughout the UK'<sup>34</sup>.
  - iv. It is also important to state that there are no viable alternatives to PMSE use of UHF bands IV and V for the foreseeable future. Professional and community PMSE users alike use these bands because this is where the equipment in which they have invested operates. There are very good historical and technical reasons for this, for example that the equipment is

<sup>29</sup> <http://www.ofcom.org.uk/consult/condocs/ddr/statement/statement.pdf> page 2

<sup>30</sup> [http://www.ofcom.org.uk/consult/condocs/ddr/ddr\\_annexed.pdf](http://www.ofcom.org.uk/consult/condocs/ddr/ddr_annexed.pdf) A8.30

<sup>31</sup> <http://www.ofcom.org.uk/research/technology/research/sectorstudies/entertainment/entertain2028.pdf> section 7.2

<sup>32</sup> As corroborated by the Sagentia Report

<sup>33</sup> [http://www.ofcom.org.uk/consult/condocs/ddr/reports/report\\_sagentia.pdf](http://www.ofcom.org.uk/consult/condocs/ddr/reports/report_sagentia.pdf)

<sup>34</sup> [http://www.ofcom.org.uk/consult/condocs/ddr/reports/report\\_sagentia.pdf](http://www.ofcom.org.uk/consult/condocs/ddr/reports/report_sagentia.pdf)

built to operate in the interleaved spectrum because it lies adjacent to channel 69, which is the only UK-wide channel dedicated for PMSE use. The interleaved spectrum provides much essential additional bandwidth adjacent to this channel (to be replaced by channel 38). Further reasons are explained in BEIRG's response to Ofcom's cleared and geographic award consultations and the CSMG Report. The 'key implication' of CSMG's analysis was that 'UHF bands IV and V spectrum will remain critical to many PMSE users (fixed-venue and touring performances, concerts and events, studio-based programme making, complex ENG/OB use, on-site TV/film production and many community users) through to the medium term (2012-2018).<sup>35</sup> This is supported by ETSI (European Telecommunications Standards Institute), which concluded in technical report TR 102 546 that 'the combination of antenna size, equipment size and propagation characteristics mean that UHF spectrum is the only solution for practical PWMS (Personal Wireless Microphone System) applications in the vast majority of scenarios'.

- c. Under Section 3 (2) of the Communications Act 2003, by virtue of subsection (1), OFCOM are required to secure 'the availability throughout the United Kingdom of a wide range of electronic communications services' in the carrying out of their functions.
  - i. If funding provided is not sufficient for equipment owners to purchase like-for-like replacement equipment, the availability throughout the United Kingdom of a wide range of PMSE services, in line with existing and projected demand, will not be secured.
- d. Whilst we recognise that ensuring that those who manufacture, supply and provide PMSE services remain in business is not one of Ofcom's duties, BEIRG would hope that this is a consideration that the Government will take into account.

**6) It would not be morally right for the PMSE sector to be financially penalised by being forced to relocate from the frequencies it currently uses.**

- a. The PMSE sector did not ask to be evicted and have its assets rendered redundant.
- b. The clearance is not intended to benefit the PMSE sector; the PMSE sector should not suffer as a consequence.
  - i. Economists believe that citizens and consumers of the UK will benefit from new products and services in the cleared spectrum.
  - ii. MNOs are likely to acquire the spectrum at auction and presumably will make substantial profits from new services deployed.
  - iii. Auction revenues will go to HM Treasury.
- c. The Government stated in the Digital Britain Report (DBR) that it 'is committed to the timely release of 800 MHz spectrum and will work with Ofcom to understand and meet the technical challenges. It has already endorsed Ofcom's proposal setting out its plans to clear channels 61, 62 and 69. The Government will facilitate this re-planning and will meet the costs incurred by broadcasters and PMSE users as a result of these changes'. The Government is fully aware that channels 61-69 inclusive are being cleared of PMSE. It would not be right for those who own equipment that operates in channels 61-68 to be excluded from the funding package, when under current proposals they will be demonstrably worse affected by

<sup>35</sup> <http://www.ofcom.org.uk/radiocomms/ddr/documents/wirelessmics.pdf> page 73

the changes. The replacement band for channel 69 has been confirmed; the same cannot be said for channels 61-68.

**7) The Government should redress its failure to appreciate and resolve the negative consequences of DSO for PMSE that were drawn to its attention back in 2002 by ensuring that the sector is not financially penalised by the relocation.**

- a. In 2003, the Government decided that, at DSO, 256MHz (70%) of the spectrum previously used for analogue broadcasting should be assigned to the operators of the six digital multiplexes operating before DSO. The question then for the Government was 'what do we do with the remaining 30%, known as the 'Digital Dividend'?
- b. In its statement on the principles for planning the use of the UHF spectrum once analogue terrestrial transmissions ended, the Government stated in 2003 that 'we expect this plan to release at least 14 frequency channels cleared nationwide for reuse in the future'<sup>36</sup>. 'Release for reuse in the future' has turned out to mean 'clear of existing services and sell via auction', as per Ofcom's interpretation and implementation of its statutory duties. All spectrum auction revenues go to HM Treasury.
- c. DSO and the DDR posed and still pose major threats to the PMSE sector; these were drawn to the Government's attention as early as 2002. For example, in response to the Government's UHF Spectrum Planning consultation paper, PMSE respondents stated the following:
  - i. 'The proposal to clear the top-ten channels (58-68) is potentially a worst case scenario for PMSE. If the spectrum were reallocated for other purposes then it would have a dramatic impact on the multitude of small business users such as sound recordists and sound mixers as well as theatres, major broadcasters and the hire companies supplying the industry'<sup>37</sup>.
  - ii. 'The large investment in existing equipment owned by our members will be written off' as a likely consequence of the Government's proposals<sup>38</sup>.
  - iii. 'For many existing users there would be no alternative to scrapping and replacing their existing equipment as it would not be viable, for either technical or economic reasons, to re-tune it'<sup>39</sup>.
  - iv. 'Most broadcasters and outside broadcast fleets have large investments in radio microphone equipment, and estimates of the total sum invested in radio microphone equipment range up to £50 million... other users of the UHF spectrum with large capital investments under threat include theatres, rental companies, corporate users and thousands of smaller users such as churches and dramatic societies'<sup>40</sup>.
  - v. 'It (the Government's proposals) prevents us buying additional radio equipment that we currently need, because there is at present no satisfactory long term alternative'<sup>41</sup>.
  - vi. 'Preservation of Channel 69 frequencies is however only a partial solution, unless the intention is to preserve them for considerably more than the ten

<sup>36</sup> [http://www.digitaltelevision.gov.uk/pdf\\_documents/publications/Statement\\_UHF.pdf](http://www.digitaltelevision.gov.uk/pdf_documents/publications/Statement_UHF.pdf)

<sup>37</sup> [http://www.digitaltelevision.gov.uk/pdf\\_documents/consultations/spec\\_planning\\_responses/spectrum\\_JFMG.pdf](http://www.digitaltelevision.gov.uk/pdf_documents/consultations/spec_planning_responses/spectrum_JFMG.pdf)

<sup>38</sup> [http://www.digitaltelevision.gov.uk/pdf\\_documents/consultations/spec\\_planning\\_responses/spectrum\\_IBS.pdf](http://www.digitaltelevision.gov.uk/pdf_documents/consultations/spec_planning_responses/spectrum_IBS.pdf)

<sup>39</sup> [http://www.digitaltelevision.gov.uk/pdf\\_documents/consultations/spec\\_planning\\_responses/spectrum\\_Sennheiser.pdf](http://www.digitaltelevision.gov.uk/pdf_documents/consultations/spec_planning_responses/spectrum_Sennheiser.pdf)

<sup>40</sup> [http://www.digitaltelevision.gov.uk/pdf\\_documents/consultations/spec\\_planning\\_responses/spectrum\\_IBS.pdf](http://www.digitaltelevision.gov.uk/pdf_documents/consultations/spec_planning_responses/spectrum_IBS.pdf)

<sup>41</sup> [http://www.digitaltelevision.gov.uk/pdf\\_documents/consultations/spec\\_planning\\_responses/spectrum\\_Brouxborne.pdf](http://www.digitaltelevision.gov.uk/pdf_documents/consultations/spec_planning_responses/spectrum_Brouxborne.pdf)

years currently suggested. In fact, ten years would only be sufficient if it begins from the latest of (a) the new frequency band being agreed (b) equipment using those frequencies being generally available, (c) viable and economical licensing arrangements and (d) costs of the new equipment falling to that of the current equipment<sup>42</sup>. (It is remarkable how similar these conditions and arguments are to those being made by BEIRG and the PMSE sector today).

- d. The Government later carried out and published an impact assessment on the timing of digital switchover and a cost-benefit analysis of digital switchover itself. Despite the fact that both assessments were carried out after the 2002 consultation on 'Digital Television: the principles of spectrum planning' and the submissions highlighted above, neither mentioned the impact on PMSE, particularly equipment to be rendered redundant or require modification. This was a major oversight, particularly as the 're-use' of the spectrum to be freed-up was listed as one of the major benefits of DSO and the Government recognised that services such as wireless microphones presently made use of the interleaved spectrum<sup>43</sup>.
- e. It is also worth noting that the conditions specified by the Government as necessary before the analogue signal could be fully switched to digital included 'consumers (not facing) unacceptable switching costs when converting to digital services and 95% of consumers (having access to) digital receiving equipment before switchover is completed<sup>44</sup>. Surely the same arguments apply to the PMSE sector when faced with the prospect of replacing all equipment rendered redundant by the digital switchover? Equipment that is vital to producing the very content those consumers require.

#### **8) The Government should redress the unintended consequences of the Communications Act 2003 by ensuring that the sector is not financially penalised by the relocation.**

- a. Through the Communications Act 2003, the Government transferred the detailed implementation of spectrum management policy to Ofcom, the independent regulator<sup>45</sup>.
- b. Having said this, the Government provided the following reassurances with regard to public policy oversight related to spectrum matters:
  - i. 'Spectrum is a finite resource, and the Government is best placed to be the final judge of whether its overall allocation between different classes of use is in line with its economic and social objectives'<sup>46</sup>
  - ii. 'The Government has undertaken not to require existing users to undergo an auction to continue to provide their existing services in the same frequency assignment'<sup>47</sup>.
- c. Despite these reassurances and warnings from PMSE stakeholders, Ofcom has proceeded to force the PMSE sector to vacate the bands it currently uses, consequently rendering tens of millions of pounds worth of equipment redundant (of course in line with its statutory duties).

<sup>42</sup> [http://www.digitaltelevision.gov.uk/pdf\\_documents/consultations/spec\\_planning\\_responses/spectrum\\_Brouxborne.pdf](http://www.digitaltelevision.gov.uk/pdf_documents/consultations/spec_planning_responses/spectrum_Brouxborne.pdf)

<sup>43</sup> [http://www.digitaltelevision.gov.uk/pdf\\_documents/publications/Statement\\_UHF.pdf](http://www.digitaltelevision.gov.uk/pdf_documents/publications/Statement_UHF.pdf)

<sup>44</sup> <http://www.ofcom.org.uk/static/archive/ra/spectrum-review/govresponsetoreview/indpreviewgovtresponsefinal.doc> 8.15

<sup>45</sup> This was affirmed in the Government's response to the Joint Scrutiny Committee on the Draft Communications Bill.

Also see <http://www.ofcom.org.uk/static/archive/ra/spectrum-review/govresponsetoreview/indpreviewgovtresponsefinal.doc> 8.38

<sup>46</sup> <http://www.ofcom.org.uk/static/archive/ra/spectrum-review/govresponsetoreview/indpreviewgovtresponsefinal.doc> 4.3

<sup>47</sup> <http://www.ofcom.org.uk/static/archive/ra/spectrum-review/govresponsetoreview/indpreviewgovtresponsefinal.doc> 5.13

- i. Ofcom was fully aware of the impact that its proposals would have on PMSE equipment. Ofcom stated that ‘we recognise the risk of causing disruption to the large community of professional users of wireless microphones and similar low power devices such as in-ear monitors and talkback. This equipment is widely used in theatres, broadcasting and special events; so we will phase in changes to spectrum management here. The cleared spectrum will cease to be available as DSO occurs region by region across the country. This will require many users to retune their equipment or purchase new equipment to make use of different frequencies.’<sup>48</sup>
- ii. Ofcom did publish estimates of potential percentage of equipment which will become obsolete after DSO, within each usage type and corresponding estimates of the cost of the obsolete equipment (based on guideline figures), but still did not include this in the Impact Assessment. The Sagentia Report did more to highlight the potential impact of the DDR on the usability of wireless microphones and IEMs than Ofcom’s consultations and statements did. For example, it estimated that 95% of radio microphones would potentially be rendered obsolete and 40% of IEMs would be rendered obsolete.<sup>49</sup>
- d. We would be surprised and disappointed if the impact of the regulator’s decisions on the PMSE sector and wider creative industries were an intended consequence of the Communications Act 2003. We would therefore urge the Government and Parliament to do whatever is necessary to ensure that the PMSE sector is not financially penalised by the migration.

**9) The Government should not allow the PMSE sector to be penalised as a result of antiquated legislative principles that are unsuitable for today’s spectrum management regime.**

- a. Whilst the Wireless Telegraphy Act of 2006 repeals the 1949 Act, the ethos of the 2006 Act remains fixed in the immediate post-war period and does not cater for the explosion of the demand for spectrum use.
- b. Generally speaking<sup>50</sup>, these ‘rights’ come in the form of a licence to operate equipment for the purposes of wireless telegraphy. The wireless telegraphy licence only bestows the right to operate equipment on the frequency in question subject to the terms and conditions of the licence, which is subject to revocation.
- c. As we understand, there are no spectrum property rights bestowed by having a licence and neither are there any rights associated with retaining the ability to deploy the equipment, and hence there is nothing in legislation that protects the value of the equipment. BEIRG believes that this is fundamentally wrong.
- d. If the frequencies that PMSE equipment operates on were considered assets such as land or property that the Government wishes to obtain (and hence displace the PMSE equipment), then the Government would have to issue some sort of Compulsory Purchase Order and the PMSE equipment owner would be entitled to some form of compensation. Most regrettably, PMSE equipment owners do not have the same rights, and legislative principles over 50 years old that have shaped today’s laws mean that the authorities have significant draconian powers to displace existing and established spectrum users such as PMSE.

**Responses to consultation questions**

<sup>48</sup> <http://www.ofcom.org.uk/consult/condocs/ddr/ddrmain.pdf> section 1.57

<sup>49</sup> [http://www.ofcom.org.uk/consult/condocs/ddr/reports/report\\_sagentia.pdf](http://www.ofcom.org.uk/consult/condocs/ddr/reports/report_sagentia.pdf) section 5.1

<sup>50</sup> Leaving aside ‘grants of recognised spectrum access’

**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?**

Yes, however there are other businesses and individuals aside from rental companies who own equipment that will be rendered redundant whose operations do not require a licence. As such, these groups of equipment owners must also be eligible for funding. For example, these would include distribution companies and other equipment stockists such as retailers.

Whilst Ofcom have provided reassurances, it is worth reiterating that there should be no burden on a rental company to prove that those to whom it rented its equipment are licensed. The burden of proof is on the rental company to demonstrate that it did not legally require a licence because it did not operate the equipment.

Aside from these arguments, Ofcom's proposals for sufficient evidence that a rental company's operations are based on equipment hire as opposed to equipment use that requires a licence seem reasonable. Similar types of evidence would need to be used to demonstrate that distributors, stockists and others did not need a licence.

**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?**

The 12-month cut-off as proposed by Ofcom could feasibly penalise legitimate claimants whose equipment had not been used and required a WT licence in the past 12 months due to a range of different circumstances:

- Long-term illness
- Career break
- Change in career
- Inventory of equipment is large to cater for peaks in demand, and included that which tunes to channel 69, but channel 69 kit was not required
- Overseas operations

There should be no time limit imposed; the priority here must be to ensure that no authorised users are 'missed out' unfairly and do not receive funding. Provided that the user can legitimately justify why the lapse occurred, they should be eligible.

**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?**

We broadly agree with Ofcom's proposed evidence for compelling reasons for making the purchase, although 'compelling reasons' must include inventories that needed to be bolstered because of increased demand in addition to equipment that needs to be replaced.

However, for the reasons outlined throughout this document, we strongly believe that it would be specious for Ofcom to apply a 'hard-and-fast' rule in the form of a cut-off date for funding that applies from any time prior to the point at which replacement spectrum is available on the same basis as that currently available. Please see answer to question 4 for explanation.

**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?**

No, the question that Ofcom seem to be asking here is essentially 'for which end-users would the availability of channels 38, 39 and 40 and corresponding licensing arrangements suggested in the consultation document offer a suitable alternative to channel 69, for which end users would it not, and why?' This question is predicated on the principle that those end-users whose operational requirements would not be met by equipment that operates across channels 38-40 would need to continue to invest in channel 69 equipment, and vice-versa.

The situation is much more complicated than Ofcom seem to think due to the nature of the PMSE sector, the way in which the UK's pool of equipment is held, the different needs of different groups of users and the fact that no post-DSO interleaved frequencies have been specified as available.

In addressing this question it is first necessary to compare operational requirements of different user-groups with the availability of channels 38-40 with that of channel 69 and explain why this comparison is fairly redundant due to the way in which the UK pool of equipment is held. It is also important to take into account (a) the extent of availability and cost of equipment that operates in channels 38-40, (b) the size of the existing pool of equipment that operates in channel 69 and (c) what the effect of this proposal would be, if implemented, on manufacturers.

#### The current availability of channels 38-40

Ofcom's availability maps show that there are

- Sizeable geographic areas where there is no available bandwidth in channels 38-40.
- Even larger geographic areas where there is only 3 MHz of bandwidth available outdoors.
- DSO will not take place in the Granada region until December so severe restrictions will remain in the corresponding locations until then for the usability of channels 38-40. This problem is exacerbated by the presence of radioastronomy services.

#### Operational requirements of different groups of users

As the PMSE sector is made up of such a diversity of users, spectrum requirements vary considerably depending upon the type of use. We therefore do not pretend that we can cover every different type of use and explain whether their operational needs can be met by equipment that operates in channels 38-40. Instead, this section is designed to illustrate how it would be specious for Ofcom to apply a 'hard-and-fast' rule in the form of a cut-off date for funding that applies from any time prior to the point at which replacement spectrum is available on a the same basis as that currently available.

- Newsgathering

The location of breaking news is unpredictable. Consequently, news teams need to go anywhere at anytime. Newsgathering (both TV and radio) is performed locally, regionally and nationally. Usage is both indoor and outdoor and is often live. Typical usage scenario per 'team' is one or two radio microphones plus talkback channel to control vehicle (controlling actions) plus audio link. Although the number of frequencies used by a news team is relatively small, a major news event will attract all the major news gatherers as well as more local news organisations. Thus there is a need to provide frequencies to multiple teams who will converge on the same location from time to time. Taking these facts into account, it can reasonably be concluded that the current availability of channels 38-40 would not meet the operational requirements of newsgathering.

- Social or 'community' users

The Sagentia Report commissioned by Ofcom states that 'social users have predominantly low usage, i.e. an average of 4 radio microphones within 1 TV channel (Ch 69) at locations spread throughout the UK'<sup>51</sup>. Taking these facts into account, it can reasonably be concluded that the current availability of channels 38-40 would not meet the operational requirements of 'social users' in the affected locations.

<sup>51</sup> [http://www.ofcom.org.uk/consult/condocs/ddr/reports/report\\_sagentia.pdf](http://www.ofcom.org.uk/consult/condocs/ddr/reports/report_sagentia.pdf)

### Why these illustrative examples are not necessarily germane

As explained above, the ownership of UK's pool of equipment for professional use is to a significant extent concentrated in the hands of rental houses and freelance engineers and then supplied to end-users when required. Consequently, PMSE equipment is and needs to be able to fulfil the operational requirements of many different types of end-users, from theatres to studio-based programming to film-production. Therefore, whilst the availability of channels 38-40 might meet the operational requirements of some users, in practice this does not necessarily mean that any migration to these bands (in terms of use) will take place in practice until the bands can meet the operational requirements of the many rather than the few.

### The critical point: there is currently very little scope for migration from currently-available frequencies.

Taking all the above into account, coupled with the fact that the post-DSO interleaved frequencies have not, as yet, been specified as available, it is difficult to see that anything other than a small number of users can start to migrate from the cleared spectrum.

However, as explained in the rest of the document, there are ways for Ofcom to at least stimulate the stockpiling of future-proofed equipment in preparation for the migration (funding provided on a like-for-like basis). This will also stimulate demand and hence keep manufacturers in business, thus facilitating the migration.

### Additional points

Ofcom have asserted that those who need to continue to use equipment that tunes to channel 69 will either have to use existing equipment through one means or another, such as hiring it. This takes no account of the fact that the pool of equipment in the UK is of limited size and demand for it is increasing (rental companies will not buy any more equipment). Neither does it acknowledge that there is no mass-market equipment that currently tunes to channels 38-40, hence it is high-end and expensive. Indeed, this question is predicated on the assumption that there is equipment that tunes across channels 38-40. Do Ofcom have any evidence to justify such an assumption?

We put a question to Ofcom - what would they expect in this example scenario?

- A freelance sound engineer needs additional equipment in order to do a job (and provide a valuable service or product to the citizens and consumers of the UK)
- Equipment that operates in channel 38 is too expensive to make the job economically viable.
- Even if he could afford equipment that operates in channel 38, he specialises in TV drama and they are shooting in Staffordshire (where available bandwidth in these channels is zero), hence this equipment would not meet his operational requirements.
- He cannot secure the additional equipment he needs from the existing UK pool.
- He cannot afford to invest in equipment that will be rendered redundant in 2012.

What does he do?

Further to this, what does Ofcom expect will be the fate of manufacturers whose market has dried up because there is no spectrum available and hence no equipment that can be produced that can meet the needs of their customers? There is a solution: it is explained in the introduction to this document. It involves stimulating demand by providing funding on a like-for-like equipment-replacement basis as soon as possible. Without the manufacturers, there can be no migration at all. This certainly would not promote the efficient use of spectrum.

BEIRG also does not understand how Ofcom can justify the date of 30<sup>th</sup> June 2009 when, at this point, there was no notice provided that the PMSE sector was expected to stop buying channel 69

equipment, there was no information provided about the extent of availability of channels 38-40 and there was no shared licensing regime established, which is still in the consultation phase.

***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.***

No, for the reasons explained in the first section of the document, we believe that all owners of PMSE equipment that will be rendered redundant as a result of DSO should be entitled to funding that will cover the full costs of replacing their existing equipment with like-for-like alternatives. This includes that which operates on channels 31-37 and 61-68 as well as 69. There should be no case-by-case basis assessment; it should be a hard and fast rule.

It is also worth raising the important point that many in the industry may have invested in equipment that operates in channels 61-68 with the reasonable expectation that they could re-tune it to channel 69 by the time the rest of the 800 MHz band was cleared of PMSE. Therefore, 'period of notice' is irrelevant.

***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?***

No, for the reasons outlined in the rest of the document, funding should not be calculated based on the residual value of equipment; it should be based on the full cost of replacing affected equipment with like for like alternatives, irrespective of the age of the existing equipment. This must apply to all affected equipment that operates in channels 31-37 and 61-69 inclusive, as it will be rendered redundant or require modification as a result of the changes associated with DSO/DDR. For the reasons explained above, this will promote the efficient use of the interleaved spectrum to a far greater extent than calculating funding based on the residual value of equipment.

***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.***

In the context of funding provision based on the full like-for-like costs of replacing affected equipment, reasonable expectation of continued access to channel 69 is irrelevant.

2018 is an end-date proposed by Ofcom for when PMSE will cease to have protected access to the spectrum awarded to the band manager. Ofcom decided to include channel 69 in this package of spectrum back in December 2007. Consequently, PMSE expected to retain access to channel 69 at least until this date. Indeed, as the date itself was put forward as the point at which PMSE is supposed not to need protection from the market, if Ofcom accept their own reasoning then PMSE must reasonably have expected to continue to use channel 69 beyond 2018. In this regard, we would be surprised if Ofcom could assert that there will not be spectrum requirement for PMSE services beyond 2018.

For BEIRG, extrapolating an end-date that relates to an argument about the requirement of protected spectrum access as a justification to restrict funding seems unfair, particularly as BEIRG has argued that the PMSE sector should have protected spectrum access until 2026.

***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?***

In the context of funding provision based on the full like-for-like costs of replacing affected equipment, 'residual value of equipment' is irrelevant, date of purchase of equipment is irrelevant and hence no evidence of the date of purchase will be required.

**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?**

No assumptions need to be made about the date of purchase of equipment because the age of equipment is irrelevant since funding provided should cover the full costs of replacing existing equipment with like-for-like alternatives.

**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?**

We strongly agree with the following factors laid out by Ofcom:

- providing accurate funding for each claim;
- minimising administration and compliance costs;
- providing incentives for timely and orderly migration;
- dealing with claims quickly; and
- ensuring a simple, transparent and predictable process.

If funding is based on the full costs of replacing affected equipment with like for like alternatives, it will be relatively straightforward to provide accurate funding for each claim through engagement with manufacturers, it will minimise administration and compliance costs, it will provide incentives for a timely and orderly migration by ensuring that users can afford to replenish existing equipment with viable like-for-like alternatives, it will enable claims to be dealt with quickly and it will ensure a simple, transparent and predictable process.

We strongly believe that the following factors must be added to this list:

- Minimising disruption to the PMSE community
- Encouraging the successful clearance of the entire 800 MHz band
- Ensuring that it is commercially viable for manufacturers to start producing alternative equipment as soon as possible

**Question 11: Do you agree with our proposal to 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?**

No. Funding should be based on the full costs of replacing affected equipment with like for like alternatives; the value and lifecycle of existing equipment is irrelevant.

Instead, it would be necessary to group existing models by their operational ability and specifications. Like-for-like equipment will be that equipment which has the same specifications but operates on channels that will be available for PMSE post-DSO.

Overall, it would be much simpler and reduce the bureaucratic burden considerably to provide funding on a like for like equipment replacement basis.

The option should remain for users to be able to modify their equipment to operate on a like for like basis as an alternative to replacement.

**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?**

A rate card would be practical way of calculating the funding of each item of available equipment. However, the categories on the rate card used to calculate the funding need to be very different from those that Ofcom have suggested. This would include the make, model and tuning capability of existing equipment, a match-up with like-for-like alternative kit that will be useable post-DSO and how much said alternative will cost. Manufacturers should be able to provide further details on this.

As stated above, funding should be provided on a like for like basis and not based on remaining asset life. The year of purchase of the equipment is irrelevant – proof of purchase date is therefore irrelevant.

**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?**

Yes. Indeed, type of user is irrelevant as the funding should cover full costs of replacing existing affected equipment with like-for-like alternatives.

**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?**

Whilst these are questions that BEIRG, as a representative organisation, cannot answer, we have strong views on the questions themselves:

- Ofcom should be asking what types and how many systems individuals and companies own that operate in channels 31-37 and 61-68 as well as channel 69. This equipment will be rendered redundant as a result of DSO/DDR as well as that which operates in channel 69 and, for the reasons explained in the first 14 pages of this submission, this equipment should also be eligible. Moreover, seeing as Ofcom have asked whether owners of this equipment should be entitled to a different period of notice, we would have thought that they considered the amount of corresponding kit in the marketplace as relevant to this question. The omission of channels 31-37 and 61-68 from this section seems to suggest that this group of users have been prematurely ruled-out.
- For the reasons explained earlier in the document, Ofcom should be asking what it would cost to replace affected equipment, not what the 'residual value' of existing equipment is.
- Ofcom should be asking whether there is alternative equipment available that suits your needs (a) now and (b) post-DSO, (c) whether it is affordable/economically viable and (d) whether the licensing arrangements in place are suitable for your needs
- Age of equipment is irrelevant.
- For the record, 90% of professional equipment sold in the UK is designed to work up to and including 15 years.

**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?**

Please see attached as Annex 1 BEIRG's submission to the Independent Spectrum Broker (ISB) which adds additional clarity to and expands upon the arguments laid out here.

If PMSE access to the 800 MHz band is terminated before the sector has been able to replace all existing equipment with alternative equipment that meets the current operational needs of end users then its ability to offer the wide range of products and services to citizens and consumers of the UK will be severely restricted; as the PMSE sector contributes significantly to the social, cultural and economic life of the UK, particularly the £15bn per annum British Entertainment Industry, all necessary steps must be taken to avoid this scenario.

For the reasons explained in previous consultation documents, we believe that a decision to clear PMSE from the 800 MHz band would disrupt the PMSE sector, particularly travelling productions that need to use more than 8 radio microphones. The need to swap equipment as they move from venue to venue as dictated by having to adapt to the variation in frequency allocation will add to costs significantly and potentially render them financially unviable. We also believe clearing the 800 MHz band of PMSE will threaten the availability of sufficient stocks of PMSE equipment for the Olympic Games.

To put it bluntly, we do not believe that it would be possible to clear the 800 MHz band of PMSE by 1<sup>st</sup> January 2012 even if all the conditions outlined in the rest of this section are met because of the timescales involved in the development, production and distribution of sufficient equipment to re-equip the vast majority of the PMSE sector. Indeed, we strongly believe that the PMSE sector should retain access to the entire 800 MHz band and channels 31-37 until, at the very earliest, after the Olympics in 2012.

However, for the purposes of answering the question, the following conditions would help to expedite the migration of PMSE:

1. Certainty about which interleaved frequencies will be available for PMSE use post-DSO - without this certainty, manufacturers cannot develop, let alone supply equipment -and users cannot determine their needs
2. Ensure that funding provided to those eligible covers the full costs of replacing all existing equipment that will be rendered redundant as a result of DSO/DDR with like-for-like alternatives, including that which tunes to channels 31-37 and 61-68 as well as 69. This will help to ensure that equipment owners can afford to replace existing equipment. If PMSE users can afford to replace existing equipment and funding is provided upon approval, this will stimulate manufacturers in terms of commercial imperative and help facilitate an early migration, but also early preparation for the migration (i.e. users will have the equipment ready to use at the time the spectrum becomes available to the extent that it can accommodate their operational needs).
3. Maximise the availability of channel 38 as soon as possible (as availability of channel 38 is increased, it will become more suitable to meet PMSE users operational needs and hence increase the proportion of users who would be willing to migrate).
4. Ensure that there is a reasonable period of dual like-for-like availability of (a) channels 69 and 38 and the (b) pre-DSO and post-DSO interleaved spectrum. Without this dual-availability, there is a considerable risk that manufacturers will experience order backlogs, thus increasing the risk of regulatory and market failure. However, the need for dual availability could be lessened by allowing equipment owners to stockpile replacement equipment and use existing equipment in the meantime, which in turn would need to be facilitated by providing like-for-like funding upon application.

5. Provide funding as soon as claims are approved (to facilitate early migration to channel 38 and/or the post-DSO interleaved spectrum for those PMSE users for which this is convenient).
6. Equipment that operates in the cleared spectrum must not be surrendered until replacement equipment can be deployed in the same way.
7. The funding mechanism would need to be put in place as soon as possible.
8. Consideration of direct capital injections to manufacturers to ensure that they have the resources to develop and produce sufficient equipment to replace all that will be affected.
9. Security of tenure in those frequencies until at least 2026. Certainty increases the incentives to invest in, develop and produce more efficient applications for the mass market that operate on channel 38 and the post-DSO interleaved spectrum. It will also increase innovation, which will lead to more efficient use. In this regard, we would recommend allocating channels 38-40 for PMSE use on a more favourable basis than 'secondary use'.
10. Licensing arrangements for channels 38 – 40 must mirror current arrangements for channel 69, the licences for channels 38 – 40 must not be any more expensive than those currently issued for use of channel 69 and users should not be required to purchase a channel 38 licence until channel 69 expires.

***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?***

BEIRG strongly believes that Ofcom should do whatever is necessary to facilitate an early migration to channel 38 for whoever it possibly can. This would certainly require claims to be approved and funding to be provided before PMSE access to channel 69 is, under current proposals, terminated in 2012. Ofcom have correctly identified that this will help realise the following objectives:

- 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.

However, it is currently very difficult to quantify the benefits because it is also clear that for the majority of users, additional measures must be taken to help facilitate an early migration from channel 38:

- All those eligible must be provided with sufficient funding that covers the full cost of replacing affected equipment with like-for-like alternatives. In absence of this condition, many users will not be able to afford to replace existing equipment with like-for-like alternatives (for example that exploits channels 38-40), let alone use it on the same basis. If users cannot afford to buy like-for-like equipment, manufacturers will not be able to produce it for the mass market and hence users will either be forced to invest in lower-end less spectrally efficient kit or not replace existing equipment at all.

- If restricted use of channel 38, particularly to the extent shown in Ofcom's availability maps, remains until 1<sup>st</sup> January 2012 (as is currently the case), equipment that operates in channels 38-40 will not be a viable option for many users until this point.

Having said this, allowing users to build up stocks of replacement equipment as soon as possible will reduce the likelihood that manufacturers experience order backlogs and, as such, this is extremely desirable. Whilst equipment owners may not deploy their stocks of replacement equipment, it will be 'ready to go' as soon as channel 38/channels 38-40 become viable for their needs.

Without a mechanism in place that facilitates the build-up of necessary equipment stocks, there is a considerable risk that (a) manufacturers suffer to the extent that they are forced out of business due to lack of demand and hence (b) there will not be sufficient equipment available at reasonable prices available for users to purchase and deploy once replacement frequencies are fully available. As Ofcom have acknowledged, this would undermine the sector's ability to provide a wide range of services and will considerably increase the risk of regulatory and market failure.

***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?***

It is absolutely critical that users are not forced to surrender their existing equipment upon application for funding. If they were forced to do so, then the vast majority of equipment owners would wait to apply for funding, and hence wait to purchase equipment that operates in alternative frequencies, until those alternative frequencies were available on the same basis as channel 69 currently is. Under current proposals, this would be the 1<sup>st</sup> January 2012 at the earliest. The migration would therefore be likely to be delayed considerably. If PMSE access to the 800 MHz band was simply terminated on 1<sup>st</sup> January 2012, users would not have had time to build up sufficient stocks of alternative equipment and relevant PMSE activity may cease entirely, at least for a period of time.

Another aspect to this argument is that, following the scenario laid out above, there would be effectively a two-year period where few, if any, equipment owners would be willing to purchase new equipment, thus reducing the sales revenue of manufacturers to the extent that they would be either forced out of business or have insufficient capital to invest in the development and production of equipment that users will require after access to the 800 MHz band is terminated.

There must be no limits imposed on the number of funding applications that may be submitted. If equipment owners were restricted to one application then this would severely disrupt their ability to manage the transition in the best way for them. This point is particularly pertinent for those with large stocks or portfolios who need to phase their acquisition of new equipment. For example, at the time of a single application, if that was imposed, the owner would need to ensure that they have sufficient capital to invest in replacement equipment. Of course, if funding was provided that allowed owners to buy like-for-like equipment in terms of operational capacity and usability, this situation may well be different.

***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?***

BEIRG prefers the third option. Users will no doubt welcome the increased flexibility and we would suggest that by-and-large they would be happy to be guided by the manufacturers and to work with them to provide a frequency plan that best suits their needs.

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

BEIRG does not disagree with the principle of including channels 39 and 40 in the shared licensing arrangements. However, we are concerned that the mechanism will not be effective in practice because it places undue burden on users to check with JFMG which of the three channels is available in the area where they are operating. Amongst the community and non-commercial PMSE sector in particular, they would not necessarily be aware that there was any such licensing arrangement in place and hence they would not carry out the necessary checks. Instead, the likely result would be a failure on the part of many users to coordinate usage and an increased risk of interference.

In any case, these arguments may well be redundant because it is unlikely that many users will purchase and use equipment that operates in these channels until channel 38 is available on the same basis as channel 69, the conditions for which include the absence of radioastronomy services in channel 38 and no TV broadcasts in adjacent channels 37 and 39.