

Ofcom Consultation

British Entertainment Industry Radio Group (BEIRG)

Spectrum Management Strategy: Ofcom's approach to and priorities for spectrum management over the next ten years - Response

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Spectrum Management Strategy

British Entertainment Industry Radio Group Response

Executive Summary

The British Entertainment Industry Radio Group (BEIRG) believes it is critical that the Programme Making and Special Events (PMSE) sector is recognised and supported as part of Ofcom's spectrum management strategy for the next ten years. BEIRG therefore welcomes the inclusion of PMSE as one of Ofcom's seven priority areas. We hope that this recognition will result in the attainment of secure, long term, quality spectrum access for the PMSE sector.

Demand for spectrum in the UK is extremely high, and growing. Ofcom must ensure that any changes it implements to spectrum allocation through its long-term spectrum management strategy, including allowing white space devices (WSDs) shared access in UHF bands IV and V, do not adversely affect incumbent users. A reduction in the quantity or quality of spectrum enjoyed by PMSE risks impacting on the sector's ability to operate, and adversely affecting the cultural benefits, social contributions, and the £36 billion p.a.¹ revenue that the British creative industries make to UK plc.

Ofcom has a responsibility to the PMSE industry to ensure that it does not suffer interference or clearance as a consequence of its long term strategy. This is particularly true with regards to the introduction of any new mobile services or WSDs, and their potential to affect licensed PMSE users.

- Ofcom must ensure that its proposed spectrum planning model fully recognises and supports the requirements of PMSE, and prioritises incumbent users over new services;
- BEIRG urges Ofcom to encourage mobile telecommunications companies to farm their already held spectrum more effectively rather than working to allocate further UHF bands for mobile broadband services, to help reduce demand for spectrum;
- The industry requires clarification on the long-term future of the 600 MHz band by PMSE, to reassure our sector and to encourage continued investment;
- Alternative bands for long-term use by PMSE should also be identified, potentially within the spectrum marked for clearance by the MOD;
- PMSE requires an exclusive, guaranteed long-term home, of an adequate quality and quantity of spectrum, in order to continue its successful operation. BEIRG believes that this must be of at least 96 MHz and free from any shared use with WSDs or other users which could interfere with PMSE operations;
- If PMSE is moved once more, such as through a potential release of 700 MHz for

¹ [Department for Culture, Media and Sport, *Creative Industries Economic Estimate* \(8 December 2011\) \(available at: \[https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/77959/Creative-Industries-Economic-Estimates-Report-2011-update.pdf\]\(https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/77959/Creative-Industries-Economic-Estimates-Report-2011-update.pdf\)\)](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/77959/Creative-Industries-Economic-Estimates-Report-2011-update.pdf)

harmonised mobile use, Ofcom needs to take into account the cost of PMSE equipment that will be rendered unusable. An associated compensation scheme will be required, as with the clearance from Channel 69; and

- Ofcom must comprehensively investigate the potential effect of WSDs on incumbent users of interleaved spectrum. This must include 'real life' testing which includes the full involvement of the PMSE sector. BEIRG is keen to work with Ofcom to facilitate this.

PMSE and Spectrum Planning

BEIRG fully supports Ofcom's efforts to achieve the most efficient possible use of the UK's radio spectrum. However, efficiency cannot come at the expense of economically important incumbent users such as PMSE. Ofcom's spectrum management strategy must fully recognise this and support the requirements of PMSE. BEIRG therefore welcomes PMSE's inclusion as one of the seven areas of priority for Ofcom. Ofcom must now ensure that its work reflects this inclusion.

In the UK the creative industries are currently responsible for 1.5 million jobs, and contribute £36 billion annually to the UK economy. Demand for spectrum in the UK is already extremely high, and is continually rising. Upwards of 90,000 requests for PMSE spectrum access are made to the licensing band manager in the UK each year. Yet while PMSE is growing in size and importance, the access to spectrum which is the life blood of its operations has been steadily eroded over time. It is essential for Ofcom to recognise that any interference to PMSE usage poses a serious risk to the revenue generation of this sector. As interference affects PMSE content production at its live source, industry users will be directly affected and face a huge potential loss of earnings and consumer reputation.

BEIRG does recognise that mobile broadband and other services may bring benefits to consumers in the future, and also recognises the ever-increasing demand for spectrum across different industries. However, the introduction of new services (for mobile broadband, white space devices, etc.) in UHF TV spectrum must not result in the exclusion of PMSE from a sufficient quantity and quality of securely sourced spectrum.

Ofcom must plan for the long term across all industry sectors. Under a new spectrum planning model, incumbent users of this spectrum, including PMSE, which have no alternative spectrum to move to in order to meet demand, should be favoured ahead of new mobile services for which alternative spectrum management and refarming can ensure adequate spectrum access.

Alternative Delivery of Mobile Services

While BEIRG is supportive of increased consumer access to mobile broadband and new technologies, we do not believe that the only means of delivering this is through clearing or imposing shared access on existing spectrum allocations. Ofcom must ensure it has considered all alternative delivery methods and the various opportunities and technologies

available to meet the increased demand for mobile services and broadband access to encourage the greatest level of spectral efficiency.

This must include encouraging telecommunications companies to farm their already held spectrum more effectively, to allow for better use of UHF bands. This would relieve pressure on efficient sub-1 GHz spectrum users, such as PMSE. The consultation omits this completely but this remains an entirely viable option, as proven by EE's re-farming of previously held 1800 MHz spectrum in order to launch 4G services before other operators.

Threat from White Space Devices

Furthermore, WSDs, while recognised as innovative technologies that may benefit consumers, should not be introduced into spectrum while there is any threat of interference to incumbent users. There remains a need to further investigate the potential effect that WSDs have on interference levels amongst other users and to take this into account as part of future spectrum management and planning. BEIRG welcomes additional trials to fully understand the implications of allowing unlicensed WSDs to operate, and the effect that this would have on other spectrum users, particularly PMSE. We are keen to work with Ofcom in order to facilitate these trials. By allowing the deployment of WSDs into UHF spectrum through shared access, an environment will develop that permits increasing and more frequent levels of interference to affect existing users of UHF spectrum. Allowing more RF energy to radiate in the band will, inevitably, impact negatively on existing spectrum users.

BEIRG therefore urges an extremely cautious approach to the deployment of WSDs and the introduction of shared access in Ofcom's strategy over the next ten years. If demand for PMSE or Digital Terrestrial Television (DTT) exists, it must always take precedence and be served before WSDs or other proposed shared user requirements, in a similar fashion to the management necessitated by the London 2012 Olympics.

Ofcom must work to mitigate all interference from WSDs and prevent any shared access agreement that will impact on PMSE use. Until it has been categorically proven that existing PMSE and broadcast users of spectrum and consumers will be entirely protected from harmful interference or disruption brought about by shared use of TV white space, further WSDs should not be introduced into PMSE's existing spectrum allocation.

Shared Access with Digital Terrestrial Television

PMSE has long been a very efficient user of spectrum, operating as it does within TV interleaved spectrum (white space) alongside DTT broadcasters. In other parts of spectrum, where radio mics can operate, PMSE users must share spectrum with licence exempt devices and find that access can be much more unreliable and of a poorer quality. Interference from TV in the UHF bands is predictable and can be accounted for as part the sharing of interleaved spectrum between PMSE and DTT. As a result, interference is minimised and the maximum possible benefit to users and consumers is obtained.

The PMSE industry has operated successfully under this model for many years, meaning that

spectrum use is optimised. Ofcom must recognise this fact within its spectrum management strategy. With such a satisfactory system already in place, BEIRG believes that it would be unwise to change it excessively, and certainly not for the purpose of introducing WSD services.

A future home for PMSE

Interference of any kind to professional PMSE services is unacceptable, and must be prevented at all cost. High profile live events depend upon PMSE, and can be completely ruined by interference. PMSE access to clean, interference free spectrum is therefore vital to protect the industry's global positive reputation. Despite this, no commitments have been given to the PMSE sector regarding the future of 600 MHz beyond 2018. Furthermore, the future of the 700 MHz band remains uncertain. PMSE also faces a significant risk of interference from the potential introduction of new services, such as WSDs.

It is therefore crucial that Ofcom identifies a long-term, permanent home for exclusive PMSE use, as part of its strategy over the next ten years.

A Study by the German Federal Network Agency in October 2008 identified that 96 MHz of spectrum was the minimum requirement for PMSE audio equipment to operate production on a daily basis². This study was carried out in an urban area, and took into consideration the operation of PMSE systems in close proximity to each other. Both practical application and the report show that 96 MHz is required for each of these locations to operate PMSE services without interference or difficulty.

It is fair to say that the UK situation is no different. At each performance in the West End there are around 1,000 pieces of wireless PMSE equipment in use across all the venues. At the same time news crews and other content producers are also operating in this area, requiring further spectrum access. Furthermore, this study did not include special events, such as national and international political gatherings and conferences, VIP visits, elections, large open air events, national and international sports events, religiously motivated meetings, parades and more. These would require Ofcom to ensure that a great deal more spectrum is available in order for PMSE to operate successfully, and is something that it must consider as part of its spectrum management strategy.

To ensure guaranteed PMSE operation without interference, BEIRG would therefore advise allocating at least 96 MHz to PMSE, free from shared use with WSDs or other services which might interfere with licensed users, as protection from any future clearances. This would require a minimum of two 8 MHz guard bands to ensure a guaranteed level of quality and non-interference. The 1427–1452 MHz spectrum marked for release by the MOD could go some way to securing a long-term solution for PMSE. While this would not be considered a complete solution for PMSE, it would be welcome assistance and a step in the right

² Institut für Hochfrequenztechnik und Funksysteme, Leibniz Universität Hannover, *Report on the frequency resource requirements of Professional Wireless Microphone Systems in urban areas with respect to changing broadcasting allocation concepts*, (29 October 2008)(available at: <http://www.apwpt.org/downloads/reportonthefrequencyresourcerequirementsofpwms.pdf>)

direction for PMSE support. Ideally, BEIRG would like to see the whole 1427-1525 MHz band opened up fully for use by PMSE, to help meet rising demand from our own sector, and to ensure that high-quality content production can continue.

Our industry must have stability in its access to spectrum, and the continuing uncertainty over what will be needed in future is impacting on both equipment sales and business. To ensure secure investment and growth in PMSE and the related creative industries, BEIRG calls on Ofcom to provide more long-term certainty to our sector.

Potential Impacts on PMSE

In this response we have made clear the potential impact on PMSE of allocating more UHF spectrum to mobile broadband, or introducing WSD without comprehensive real-life testing to guarantee that no interference will be caused to PMSE users.

However, there are other, wider reaching implications of Ofcom not taking into account the needs of PMSE in its strategy for the next ten years. PMSE drives content production; the very same content that mobile broadband is designed to supply. Demand for PMSE spectrum must be assessed in a realistic way before any others are examined. If PMSE does not have sufficient access to spectrum, its capability to produce content will be severely hindered – even to the point where the industry will not be able to supply enough content for consumers to watch, ironically in some cases via broadband access. Content creation comes before content delivery. This fact should not be ignored. Ofcom must consider carefully the impact of 700 MHz clearance on PMSE in the run up to WRC-15, and to recognise the damage that will be done to incumbent users if clearance goes ahead.

Any future changes to spectrum allocation, such as through the possible clearance of 700 MHz, will affect the ability of the UK creative industries to operate, risk diminishing their contribution to society and deny a range of benefits to citizens. Consumers may be faced with the cost of replacing DTT equipment, so soon after the Digital Switchover, to ensure that it can still operate. Ofcom must take this into account as part of its spectrum management strategy. Unlike during Digital Switchover, which brought with it access to Freeview channels and stronger transmission signals in many areas, consumers will not see any marked benefit in paying these costs. Furthermore, Ofcom also needs to consider the potentially massive social and cultural costs to consumers in instances where PMSE is unable to put on shows, concerts and other events as a consequence of spectrum clearance. This cost will be hard to quantify. Spectrum clearance can also cause costs to small organisations, such as schools and churches, who use PMSE on a smaller scale and who will be forced to replace redundant equipment.

If further clearances were made, the PMSE sector would require a formal compensation scheme, similar to that delivered as part of the clearance of Channel 69. It is not acceptable that PMSE users will be expected to purchase new equipment just a few years after doing so, having been removed from the 800 MHz band. The industry typically gets between fifteen and twenty years of use out of professional equipment. Given that many members of the PMSE industry have only recently purchased new equipment, BEIRG is greatly concerned with the potential financial loss now facing the sector. Ofcom should also

consider this possibility as part of its spectrum management strategy for the next ten years.

Future Industry Engagement

Constant speculation and consultation undermines both the PMSE industry and other industries linked to it. This is economically damaging. Future disruption to the industry, and the spectrum to which it has access, is threatening its ability to continue to produce the world class content which is screened and exported throughout the world. This is in the interest of neither citizens nor consumers, and BEIRG believes that Ofcom has an on-going responsibility to ensure that the PMSE industry does not suffer interference or clearance as a consequence of any new mobile services. BEIRG would like Ofcom to urgently determine, as part of its spectrum management strategy, a plan for the industry which will protect the long-term future of PMSE in the UK, and that will help our sector to invest, grow and support the UK creative industries. This should include the identification and allocation of a new, long term, secure spectrum allocation for PMSE.

Ofcom must persist in closely engaging with the PMSE industry, to take into account fully the extent of any potential impacts that changes to future spectrum planning and management will have. To assist in this, BEIRG will continue to liaise with Ofcom and help to clarify the current extent and potential impacts on the PMSE industry as part of future stakeholder engagement. The reintroduction of the Technical Working Group concerning the impact of WSDs on incumbent UHF spectrum users is a welcome step towards achieving this. However, Ofcom must ensure that it carefully takes note of, and acts upon, the Group's on-going discussions and recommendations. Making use of industry knowledge and experience is the best way for Ofcom to ensure it is operating in its best interests and will guarantee optimal spectrum use for the future.

Conclusion

Ofcom's spectrum management strategy over the next ten years must take into account the needs of PMSE as a vital industry. By identifying PMSE as one of its seven priorities, Ofcom is clearly acknowledging this fact, and BEIRG welcomes this inclusion. However, this statement of intent must now be reflected in the way that Ofcom approaches PMSE's future spectrum allocation and in its management of this sector.

The identification and allocation of a sufficient quantity of exclusive, interference-free spectrum for PMSE is of paramount importance to guaranteeing its continued success. BEIRG look forward to working closely with Ofcom, in a spirit of cooperation, to achieve a long-term solution to ensure the future of our industry.

In the period before this process is finalised, it is crucial that PMSE's current spectrum allocation, and its ability to continue to produce world class content, is not compromised, either by clearance from existing spectrum or the introduction of WSDs.

British Entertainment Industry Radio Group

The British Entertainment Industry Radio Group (BEIRG) is an independent, not-for-profit organisation that works for the benefit of all those who produce, distribute and ultimately consume content made using radio spectrum in the UK. Venues and productions that depend on radio spectrum include TV, film, sport, theatre, churches, schools, live music, newsgathering, political and corporate events, and many others. BEIRG campaigns for the maintenance of 'Programme Making and Special Events' (PMSE) access to a sufficient quantity of interference-free spectrum for use by wireless production tools such as wireless microphones and wireless in-ear monitor (IEM) systems.

As well as being vital in producing live content, wireless PMSE technologies play a key role in helping to improve security and safety levels within the entertainment industry and other sectors. Their benefits include improving the management of electrical safety, the reduction of noise levels, the development of safety in communications and reducing trip hazards as well as providing an essential tool for the security orientated services. Wireless equipment and the spectrum it operates in are now crucial to the British entertainment industry.

BEIRG is a member of the Association of Professional Wireless Production Technologies (APWPT)³, which promotes on an international level the efficient and demand-driven provision and use of production frequencies for professional event productions, as well as safeguarding such production frequencies for the users on the long run.

³ See <http://www.apwpt.org/>