BEIRG
BRITISH ENTERTAINMENT INDUSTRY RADIO GROUP

c/o Ranelagh International Ltd., One Ranelagh Road London, SW1V 3EX Tel: +44 (0)20 7828 1603 www.beirg.org.uk jeremy.burton@ranelagh-intl.com

Work of Ofcom

British Entertainment Industry Radio Group Submission to the Culture, Media and Sport Select Committee

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 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)[1], 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.

Spectrum and the Entertainment Industry

The economic and social importance of Programme Making and Special Events, and the creative industries which rely on it, is growing. In the UK the creative industries are currently responsible for 1.5 million jobs, and contribute £36 billion annually to the UK economy. While PMSE is growing in size and importance, the access to spectrum which is the life blood of its operations is being steadily eroded. Without sufficient access to spectrum, the PMSE sector's ability to produce content for consumers is severely hindered. It is essential to recognise that any interference to PMSE usage poses a serious risk to the revenue generation of this sector. As

[1] http://www.apwpt.org/

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.

PMSE services contribute significantly to the economic and social wellbeing of the UK. For example, the West End of London, which uses PMSE equipment to produce much of its content, attracts visitors from all over Britain and tourists from across the world. The current estimated annual turnover of the West End is £500 million, and it receives around 15 million visitors a year. Including downstream revenue such as merchandise, transport and hotels, the current estimated economic impact is £2 billion. This figure is continuing to grow. Similarly, music festivals and live music concerts also contribute a significant amount to the British economy.

The PMSE sector's key concern is that the industry is being edged out of access to spectrum, and is approaching a crisis point. Ofcom needs to ensure continuing sustainability for PMSE. The industry is concerned that their ability to produce world class content, and remain internationally competitive is being substantially damaged by Ofcom's current UHF strategy. Following the Digital Dividend Review and auction of the 800MHz band for 4G mobile services, the quantity and quality of spectrum available has been significantly reduced, and now the uncertainty over the future of the 700 MHz band has raised serious questions with regards to the quantity and quality of spectrum available to PMSE in the UK for current and future production requirements. BEIRG is concerned that too great an emphasis is being placed by Ofcom on securing large quantities of spectrum for mobile broadband services to the detriment of incumbent users, without ensuring adequate provision is made to allow current stakeholders to continue operating successfully.

Spectrum Policy

Current spectrum policies pursued by Ofcom and the Government have been particularly damaging towards the PMSE industry. The needs of the sector have been disregarded, and there exists a real threat to the long-term stability of PMSE and its ability to continue producing world-class content. Each Government policy has brought about a new threat to PMSE:

- **Digital Dividend (800 MHz)** – spectrum sold off; a loss of 48 MHz to PMSE users including Channel 69
- **700 MHz** – now earmarked for potential clearance and the eviction of PMSE
- **600 MHz** – confusion and concern over future use of this band
- **White Space Devices (WSDs)** – threat of interference to interleaved spectrum

The majority of debate over the future of the 700MHz band, currently used for Digital Terrestrial Television (DTT), has so far been focused by Ofcom on the spectrum requirements of television broadcasting, 4G and greater mobile data consumption. All the while, spectrum for the industry that produces the content for these services appears to have been a secondary concern. The PMSE sector uses 'TV White Spaces' to produce content for television, film, music concerts and theatre. This content is then consumed live, on TV, and on demand. Demand for this content is growing both domestically and overseas – but it is widely accepted that the growth in mobile data is being driven by a greater demand for audio-visual content. The PMSE industry's ability to continue to produce high quality content is now being threatened, as regulators attempt to free up spectrum for 4G and mobile data services. Yet without PMSE, this rising content demand and the huge economic impact the creative industries have would not exist.

Quantity of Spectrum

PMSE Requirements

A Study by the German Federal Network Agency in October 2008[2] identified that 96 MHz of spectrum was the minimum requirement for PMSE audio equipment to operate production on a daily basis. 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 1000 pieces of wireless PMSE equipment in use across all the venues. At the same time news crews and other content produces 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 to operate successfully.

Spectrum Use Example: London 2012 Olympic Games

- The London Olympics would not have been possible to produce without the spectrum made available for the event specially, in the 2.5 – 2.69 GHz spectrum and the 800 MHz radio mic channels.
- Both of these bands completely closed to the PMSE sector at the end of 2012.
- Capital cities will always expect to be able to produce such large-scale events but may find their capability to do so severely hindered in the future if spectrum access for PMSE continues to be reduced by regulators.

If excessive levels of spectrum are allocated to the mobile communications industry, it will no longer be possible to temporarily borrow the required spectrum for future international events of this scale in the UK. The country may therefore find its capability to host similar events all but removed.

Planned Clearances

As part of the Digital Dividend Review, Ofcom intended to clear the 600MHz band for sale. PMSE users prepared to move from this by 2013. Comments at the World Radio Conference 2012 (WRC-12) have led to Ofcom consulting on the future clearance of DTT and PMSE from the 700MHz band to allow the band to be used for mobile broadband services by as soon as 2018. There is an assumption by Ofcom that this is the definite end result, despite no clear decision having been made on future use of 700 MHz at WRC-12. The sector requires clear confirmation on the future of the 600MHz and 700MHz bands, as the continuing uncertainty is damaging for the industry. In light of potential changes to the 700MHz band, coming as a result of the WRC-12 comments, Ofcom is delaying the 600MHz auction and extending use of the 600MHz band for PMSE. This is a positive development, but the industry needs certainty that this is a long term solution rather than a temporary measure. This must also include confirmation of future access to Channel 38 for dedicated use, which is critical for PMSE operations.

Constant speculation and consultation continually undermines both the PMSE industry and business. 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 a 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 and secure a plan for

[2] http://www.apwpt.org/downloads/reportonthefrequencyresourcerequirementsofpwms.pdf

the industry which protects the long-term future of PMSE in the UK, and will help our sector to invest, grow and support the UK creative industries.

With regard to meeting the increasing quantities of spectrum demanded for mobile services, it should be possible for mobile companies to ensure adequate mobile broadband coverage and be able to provide sufficient levels of spectrum to consumers with the level of UHF band access that they currently enjoy. This is especially true now that they have access to the 800MHz and 2.6GHz bands. If future demand can be met by mobile companies refarming their existing spectrum, making better use of the resources available to them, then BEIRG cannot see why access to the 700MHz band should be allowed by Ofcom for mobile broadband at the expense of other industries. Mobile broadband quality should not be viewed as a direct replacement for broadband delivered via cable.

In the instance that any further clearances are put into place to cater for increased mobile access, the PMSE sector would require a formal compensation scheme to be established by Ofcom, as was previously granted following the clearance of the 800 MHz band and Channel 69 (which was dedicated for PMSE use). It is not feasible for the sector to only have a short few years of use from new equipment before fresh purchases must be made as a result of spectrum clearance; 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 equipment which operates in the 700 MHz band to replace that which operated in 800 MHz, BEIRG is greatly concerned with the potential financial loss now facing the sector once again.

Quality of Spectrum

To facilitate production of high quality content, PMSE access to spectrum must also be free of interference. Protection from interference is essential for existing users and the successful operation of PMSE equipment. This is now being put at risk by Ofcom's intention to allow unlicensed White Space Devices (WSDs) to operate in the same spectrum as PMSE. There are significant levels of concern within the entertainment industry that these devices will interfere with incumbent users. The clearance of the 800MHz band has already significantly reduced spectrum available, and signals below this band have the potential to experience interference from new 4G services. Given the low power levels at which PMSE devices operate, they are in fact at a much greater risk of harmful interference than DTT transmissions. With this potential threat already on the horizon, BEIRG is extremely concerned about the additional effects that introducing WSDs into UHF spectrum may have on spectrum quality. The very significant and real threat of interference to licensed PMSE devices from unlicensed WSDs is so great that BEIRG believes that every safeguard possible must first be put in place to protect the creative industries from irreparable damage, before any risks are taken that may compromise their ability to continue generating many billions of pounds annually.

Demand for spectrum in the UK is substantial, and growing. Upwards of 90,000 requests for PMSE spectrum access are made to the licencing band manager in the UK per year. These include temporary and annual assignments. Under the current licensing regime the Band Manager, currently the Joint Frequency Management Group (JFMG), has no powers to prosecute illegal unlicensed spectrum users. Policing powers are retained by Ofcom, who have not, in recent years, prosecuted against unlicensed usage of spectrum utilised by the PMSE community. BEIRG believes that if Ofcom go ahead with the deployment of White Space Devices into UHF spectrum, they have the potential to severely compromise PMSE's operating environment. By allowing their deployment, Ofcom will effectively be allowing an environment to develop that allows increasing levels of interference to affect existing users of UHF spectrum far more frequently.

Consequently BEIRG believes that there should be clear lines of accountability. If the audio portion of a major concert or sporting event is ruined by interference from WSDs, resulting in cancellation of the event, BEIRG would like it to be made clear who will be held accountable. Ofcom's present plans state that interference could also only be corrected after the event. This must be altered to provide greater protection for our industry, as such action could lead to major concerts and events becoming uninsurable. Whilst BEIRG would prefer not to see any WSDs operating in TV whitespace, we recognise that the current direction of travel is towards a shared spectrum access model. With this in mind, BEIRG has engaged with Ofcom on on-going WSD policy, and would like to see this issue resolved. As Ofcom has confirmed that DTT and PMSE are to remain as the primary users in the bands in question, BEIRG can envisage situations when WSDs will be unusable. Due to the very specific nature of live performance, real time, no-latency products are the only means to produce PMSE content; and spectrum is fundamental to their use. It is evident that a reduction of production quality to save spectrum is not an option. If demand for PMSE or DTT exists, it therefore must always take precedence and be served before WSD requirements, in a similar fashion to the management necessitated by the London 2012 Olympics.

Furthermore, it is vital that Ofcom also notes that a handful of spot frequencies provide the communication systems that give operational safety to dozens of shows. Unlike other technologies, wireless microphones do not have the capability to move to platforms other than radio spectrum. BEIRG is therefore extremely concerned about the repercussions that this could have for workplace safety at many events which rely on PMSE. At present there is **no alternative product** anywhere near reliable enough to replace this wireless communication equipment.

The Future of PMSE

During the clearance of the 800MHz band, the PMSE industry suffered significant financial and operational upheaval. 4G services, WSDs and unlicensed use of spectrum offer the continuing threat of interference. Suffering interference is not an option for PMSE. Further disturbances in the spectrum available to PMSE will seriously damage the industry.

While BEIRG recognises that mobile broadband may bring benefits to consumers in the future, this should not be at cost to highly successful and continuing industries reliant on spectrum such as PMSE. The impact on these industries will outweigh those benefits to citizens and consumers. Removing 700MHz will severely hinder the PMSE sector's ability to produce the content which consumers demand, and that DTT and entertainment industry productions rely upon. It will also damage many PMSE businesses, and consequently the customers which depend on them. The Government and Ofcom need to seriously consider the impact removing PMSE access to 700MHz will have on citizens and consumers in the UK, and the content which is produced in the UK and exported across the world, on top of the impacts already experienced as a consequence of spectrum policy to date. PMSE is an essential service, which requires secure, long-term spectrum access.