

RSPG Consultation

British Entertainment Industry Radio Group (BEIRG)

Draft RSPG Opinion on Licensed Shared Access - Response

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BEIRG Response

Executive Summary

The British Entertainment Industry (BEIRG) is not in favour of allowing mobile telecoms services of any kind to share spectrum access with Programme Making and Special Events (PMSE) users. Such an arrangement would be highly damaging to our industry, and would essentially prevent PMSE equipment from operating in any shared bands at all, due to the unavoidable impact that interference from mobile usage would have. Additional licence exempt access to spectrum for wireless broadband communications and/or access to previously assigned spectrum facilitated through licensed usage, under a Licensed Shared Access (LSA) approach, should therefore not be undertaken.

Instead, we believe that the EC must obtain a better understanding of what spectrum is currently being utilised by mobile network operators, and determine how it could be used more efficiently to meet demand through refarming. This would prove to be a far more constructive and sustainable solution for long-term spectrum management. The vast majority of UHF spectrum held at present by mobile operators could be eligible to undergo some degree of refarming to increase the efficiency of their services, as current usage levels are far from optimal. Doing so would prove to be a more economical use of current spectrum resources, over pursuing an LSA approach for mobile broadband in additional bands. The overall quality of service, and hence benefits to users and consumers, would be far greater for all parties under this scenario.

PMSE has long been a very efficient user of spectrum. Users operate within TV interleaved spectrum (white space) alongside Digital Terrestrial Television (DTT) broadcasters, primarily in 600 MHz and 700 MHz, utilising these gaps to make as effective and efficient a use of this interleaved spectrum as possible. In doing so, interference is minimised and the maximum possible benefit to users and consumers is obtained. There would therefore be little opportunity or available spectrum for any additional services to have shared access in these bands as well. The PMSE industry has operated successfully under this model for many years. With such a satisfactory system already in place, BEIRG believes that it would be unwise to change it by allowing LSA in these bands.

Our industry is already threatened by the proposed introduction of unlicensed White Space Devices (WSDs) into spectrum used by PMSE and DTT. As with mobile services, interference from WSDs will have a negative effect on PMSE operations in any spectrum that they are allowed to share in the future. BEIRG cannot see how unlicensed devices such as these could even be entered into LSA agreements as, by their very nature, they could not formally determine their geographic areas of operation, intended time usage or the levels of demand, all of which are required by the EC in advance for the purposes of a formal LSA agreement.

BEIRG therefore calls on the EC to ensure that continued spectrum sharing between PMSE and DTT can continue unimpeded into the future, and is protected from additional spectrum demands brought about through having to share with mobile broadband services, WSDs, or any other potential LSA users.

Economics of PMSE

The economic and social importance of PMSE, 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. 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 annual turnover of the West End is circa £500 million, and it receives around 15 million visitors a year. Including downstream revenue such as merchandise, the estimated economic impact is £1.5 billion. Theatres outside London have a current turnover of circa £372 million, and attendances of circa 17 million. Across the West End and the Regions the equivalent of 50% of the entire population of the UK attends a theatre each year. Similarly, music festivals and live music concerts also contribute a significant amount to the British economy, and continue to grow in popularity year on year. The economic argument for support of PMSE users is clear.

While PMSE is growing in size and importance, the access to spectrum which is vital to its operations is being threatened. Allowing spectrum currently used by PMSE to be opened up for Licensed Shared Access will only heighten the erosion of this valuable resource for PMSE. Without sufficient access to adequate and interference free spectrum, our 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 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.

In any production uninterrupted audio is **absolutely critical**. Any interference experienced that causes a wireless audio failure has severe repercussions for both the production and the audience alike. There is therefore a need for new services to recognise, respect and co-exist with PMSE users without resorting to shared access, instead making the most of the spectrum that they have to ensure fair usage for all.

The PMSE industry in the UK has already faced serious upheaval over the past decade. The clearance of the 600 MHz and 800MHz bands has placed a serious financial burden on the industry. The threat of interference from unlicensed White Space Devices (which would compete with cognitive systems for PMSE) and the potential clearance of the 700MHz band, are providing further concern for PMSE professionals and undermining investor confidence. At the same time, consumer demand for PMSE produced content is rising. BEIRG believes there will soon be insufficient spectrum available to operate necessary quantities of PMSE equipment for large-scale musical productions to be staged at certain prime venues across the UK. The introduction of LSA will only serve to hasten this.

PMSE Spectrum Requirements

Unlike other technologies, wireless microphones do not have the capability to move to platforms other than radio spectrum. Whereas television broadcasts may potentially be able to be broadcast online in the longer-term, PMSE equipment cannot function on any platform other than clean, interference-free spectrum. Currently there is only a limited pool of PMSE equipment that operates outside the UHF spectrum; the UHF bands offer the largest quantity of contiguous, good quality spectrum required for large professional events, and this must be protected.

Interference from TV in the UHF bands is predictable and can be accounted for as part of PMSEs sharing of interleaved spectrum with DTT. The two users can operate efficiently side by side, with PMSE making use of TV white spaces. In other parts of spectrum where radio mics can operate, PMSE users must share spectrum with license exempt devices and find that access can be much more unreliable and of a poorer quality. This type, and quantity, of interference will only rise if LSA is allowed for mobile services or WSDs in this spectrum. While BEIRG recognises that mobile broadband may bring benefits to consumers in the future, this should not be at cost to other industries reliant on spectrum such as PMSE. The impact on these industries will outweigh those benefits to citizens and consumers.

PMSE drives content production, and produces the content that mobile broadband is designed to supply. 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, in some cases via broadband access. Such a scenario would render in increase in mobile broadband levels unnecessary and impact on the service quality received. Content creation comes before content delivery. Without it, audio-visual mobile content will decline in quantity and quality, no matter how much spectrum is allocated to mobile broadband. This fact should not be underestimated, or ignored.

Demand for spectrum in the UK is extremely high, and growing. Upwards of 90,000 requests for PMSE spectrum access are made to the licensing band manager in the UK each year. Any changes to spectrum allocation which will affect the ability of these industries to operate, including shared access, risk diminishing their contribution to society and reducing their capability to provide a range of benefits to consumers. BEIRG believes that the European Commission has a responsibility to the PMSE industry to ensure that it does not suffer interference or clearance as a consequence of any new mobile services. Introduction of widespread LSA will only serve to decrease confidence in our sector.

PMSE Equipment

Due to the relatively limited tuning ranges of PMSE equipment access to contiguous bands of spectrum is very important for flexibility as well as quality of PMSE. Regional variation in spectrum use causes changing requirements for PMSE which must adapt to local availability. Putting more pressure on PMSE through an ever-decreasing amount of spectrum as a consequence of Licensed Shared Access will be highly damaging for the long-term benefits that could be gained through good management. The development of PMSE equipment designed to deal with increasing spectrum congestion would, as a result, be far more expensive, as it needs to be able to exploit more efficiently what spectrum remains in the UHF bands and attempt to mitigate as much as possible the heightened levels of interference shared access would bring. This will be detrimental to the industry.

BEIRG would agree that LSA should not, in the long term, limit potential innovation by incumbent services or introduce harmful interference to these users. The only way to completely ensure that this is the case for bands used by PMSE is to not allow LSA for mobile services in this spectrum. Otherwise, the implementation of the LSA concept will have significant, negative impacts on the rights of incumbent PMSE users. While LSA may be appropriate for certain bands, it should not be considered for any channels in which PMSE operates.

Refarming Spectrum

BEIRG welcomes the RSPG recommendation that consumers' interest shall be preserved in the implementation of LSA. However, the best way for this to be achieved is for the European Commission to plan for the long term across all industry sectors, ensuring that sufficient levels of spectrum is available for all users without oversaturating usage of the UHF bands.

As mentioned above, BEIRG is in favour of encouraging telecommunications companies to farm their already held spectrum more effectively, allowing better use of UHF bands and relieving the pressure on other spectrum users such as PMSE, who fear further selloffs and rising levels of interference. The past actions of extending mobile broadband spectrum access, over supporting the reuse of existing resources, did not encourage sufficient efficiency amongst the mobile telephone industry. While PMSE is an efficient user of spectrum, able to make use of interleaved spectrum to operate alongside other users such as DTT, mobile telephone technology is not. The introduction of LSA for mobile broadband services would not work well enough to ensure a sufficiently greater efficiency of spectrum use overall, and would impact on the technical quality of service received by consumers and produced by incumbent users. BEIRG therefore disagrees that LSA has the potential to enable spectrum to be brought into use in a more efficient manner, when considered against refarming as an alternative spectrum management approach for mobile services.

BEIRG is concerned that the mobile companies have so far not best utilised their current spectrum allocation and that much more efficient use could therefore be made of this limited resource. The EC should encourage this option as strongly as possible. Refarming could be complimented with additional base stations for the bands already held by mobile operators, to remove the need for further spectrum allocation or the introduction of shared access in bands used by PMSE, improve spectral efficiency and help reduce spectrum pollution (including out of band energy) for mobile and other spectrum.

We would therefore support future refarming efforts from the EC and the telecommunications industry. 800MHz and 2.6GHz, now auctioned off in the UK to mobile operators, must be made best use of in the most efficient way possible, to ensure fair use of spectrum among all industries. BEIRG feels that no decision should be made on Licensed Shared Access until it is clear how much demand can be met first by refarming the licenses in question, and ensuring the efficiency of new services. If future demand can be met in this way, then BEIRG cannot see why Licensed Shared Access should be allowed for mobile broadband at the expense of other industries. It is imperative that mobile telephone companies look at their existing spectrum holdings and be encouraged to get the most appropriate value out of it, as applicable to its propagation characteristics.

White Space Devices

BEIRG believes that the deployment of WSDs into UHF spectrum has the potential to severely compromise PMSE's operating environment. Interference free spectrum is crucial to the successful operation of PMSE equipment. By allowing the deployment of White Space Devices into UHF spectrum, through shared access, an environment will be allowed to develop that permits increasing levels of interference to affect existing users of UHF spectrum far more frequently. 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 related LSA.

As far as the PMSE industry is concerned, all interference is potentially harmful and able to cause serious problems within our sector. PMSE equipment is used at the very front of the production chain; therefore any interference experienced by this equipment destroys not only the performance or event, but also any downstream revenue generation. For many PMSE users such as theatres, live TV broadcasts, live music and large political and industrial events, the presence of interference from unlicensed users can be disastrous, even if for only a short period of time. BEIRG urges the EC to work to mitigate all interference from WSDs and look to prevent LSA that will impact on PMSE use, which we envisage could have a very similar impact on PMSE production if introduced. Until it can be clearly shown that existing PMSE and broadcast users of spectrum and consumers will be entirely protected from harmful interference or disruption brought about by LSA, and a safe balance can be struck, further WSDs should not be introduced to shared spectrum.

BEIRG is concerned that PMSE is still considered a consequential user that only receives intermittent access to white space within spectrum primarily reserved for DTT. It must be considered a fully-fledged incumbent user, which cannot be asked to cope with the impact of additional users sharing their spectrum through LSA agreements. If demand for PMSE or DTT exists, it must always take precedence and be served before WSD or other proposed shared user requirements, in a similar fashion to the management necessitated by the London 2012 Olympics.

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.

¹<http://www.apwpt.org/>