

RSPG Consultation

British Entertainment Industry Radio Group (BEIRG)

Opinion on Strategic Challenges facing Europe in addressing the Growing Spectrum Demand for Wireless Broadband

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British Entertainment Industry Radio Group

Response to RSPG Opinion on Strategic Challenges facing Europe in addressing the Growing Spectrum Demand for Wireless Broadband

BEIRG is not in favour of allocating any more spectrum for wireless broadband at this time.

Instead, we believe that obtaining a better understanding of what spectrum is currently being utilised by mobile network operators, and how it could be used more efficiently to meet demand through refarming, would be far more constructive. Constant speculation and consultation continually undermines both the Programme Making and Special Events (PMSE) industry and business. This is economically damaging. BEIRG calls on the European Commission to urgently determine and secure a long term plan for the industry, which protects the long-term future of PMSE in the UK, and will help our sector to invest and to grow.

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 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, the estimated economic impact is £1.5 billion. Similarly, music festivals and live music concerts also contribute a significant amount to the British economy.

While PMSE is growing in size and importance, the access to spectrum which is vital to its operations is being 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 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**. Consequently, 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, as well as to make 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 proposed 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.

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. This is not the case for other “usable” blocks of spectrum like 1.8GHz, 2.4GHz, or even 5GHz for which some manufacturers make a small amount of equipment. Furthermore, interference from TV in the UHF bands is predictable and can be accounted for, while 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.

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. 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 risk diminishing their contribution to society, and reduce their capability to provide a range of benefits to consumers.

PMSE Clearance

We do not accept that the 700 MHz band needs to be cleared for the purposes of wireless broadband. No formal decisions were reached at WRC-12 with regard to the future of this band, and BEIRG does not believe that widespread spectrum clearances should be undertaken. It is important that mobile companies make better use of their existing spectrum resources for mobile broadband before being assigned any new bands. Given the large quantity of spectrum available to mobile services, and the limited access which PMSE already has, no decision should be made on 700MHz until mobile services can prove to be making the most efficient use of their available spectrum. It should be possible for mobile companies to ensure adequate mobile broadband coverage with the level of spectrum access that they currently enjoy. Additional spectrum allocation for mobile broadband would therefore not be needed at this time. We are concerned that the mobile companies have so far not best utilised their current spectrum allocation and that much more efficient use could be made of this limited resource.

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 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.

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 will be highly damaging for the long-term benefits that could be gained from UHF Bands IV and V 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. This will be detrimental to the industry. Our industry must have stability in its access to spectrum, and the continuing industry uncertainty over what will be needed in future is impacting on both equipment sales and business. The European Commission must work to ensure that the least possible disruption is caused to PMSE services and operators. If further clearances were put into place, the PMSE sector would require a formal compensation scheme. Being allowed only a short few years of use from new equipment, before fresh purchases must be made as a result of spectrum clearance, is not feasible for the sector; the industry typically gets between fifteen and twenty years of use out of professional equipment.

Data Demand

BEIRG believes that the definition of 'mobile data' needs to be more closely outlined, for the industry to be able to obtain a better picture of future demand. LTE treats voice as data, which distorts the overall picture of demand somewhat. We are not convinced that demand will necessarily increase exponentially, as EE's rollout of 4G in the UK has shown that the cost of access is too great, and the quality of data is not as high as that received over Wi-Fi. Neither can this be ascribed to a current lack of market competition – the picture from South Korea is that the cost of 4G is too great for consumers, despite unprecedented demand for data.¹ The use of data will therefore be directly affected by its costs and the quality received by customers.

In the future, we expect that quantities of video and audio data consumption will increase on mobiles, particularly through Wi-Fi, which will be fuelled by PMSE. Audio-visual content production will therefore be harmed if PMSE is increasingly constrained by every decreasing spectrum access and interference. A balance must be struck between mobile data demand, and content production. PMSE, as a growing industry, must be allowed to continue uninhibited. Without it, audio-visual mobile content will decline in quantity and quality, no matter how much spectrum is allocated to mobile broadband.

Once a better understanding of the impact of 4G on the benefits to consumers is better understood, the question of how much spectrum demand truly exists for WBB can be more fully answered. As LTE gives a poorer data quality at premium rates, when compared to use of Wi-Fi by mobile users, the present goals of the 4G rollout may not be realised as a consequence of alternate services (such as Wi-Fi) being made increasingly available. Evidence cannot be gathered on the extent of benefits associated with increasing demand for mobile data until the service is rolled out, however, in order to do this, spectrum has to be sacrificed to mobile broadband.

It should also be noted that mobile broadband is only one mechanism for data delivery, and it is one that cannot deliver what wired can. Use of wired Wi-Fi systems wherever possible to facilitate data delivery and use should be fully encouraged. While there is a difference in relative costs, the life of a wired network is 30-50 years, compared to 10-15 for wireless. Spectral efficiency of networks should be the European Commission's primary focus, and a concentration now on Wi-Fi provision by mobile operators to provide data access would help to relieve a great burden on spectrum use.

¹ <http://www.bbc.co.uk/news/technology-21579503>

Therefore, no further spectrum should be allocated for mobile broadband, as no particular consumer benefits can be adequately identified from the 4G rollout to date. As part of this, no mobile operators have announced what they will provide to consumers other than data. The services on offer and the term 'data' need better definition before the benefits can be studied.

Refarming Spectrum

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. 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.

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. Refarming could be complimented with additional base stations for the bands already held by mobile operators, to remove the need for further spectrum allocation and improve spectral efficiency, and help reduce spectrum pollution (including out of band energy) for mobile and other spectrum. It is therefore 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. No further spectrum should be allocated for mobile broadband until the current allocations are used efficiently, in a way that maximises traffic and usage, until a full understanding of future demand is obtained. Furthermore all displaced services (including PMSE) must be adequately rehoused in a stable, new home before future allocations are considered.

The European Commission must plan for the long term across all industry sectors, and BEIRG would 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 the 700MHz band until it is clear how much demand can be met 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 access to the 700MHz band should be allowed for mobile broadband at the expense of other industries.

700 MHz

BEIRG believes that fully releasing 700 MHz frequencies for WBB in Europe would be extremely problematic. It is already extensively used by DTT, which is an important platform. Broadcasters would not be able to give up this band without first undergoing substantial network re-planning, and being forced to seriously address the long-term sustainability of the DTT platform. To allow PMSE professionals to produce the best possible content, BEIRG believes that PMSE must continue to be allowed interleaved access to the 700MHz band, without the threat of interference from any WSD or WBB activity. In addition, we would like to see some contiguous channels put aside in the 600MHz band for dedicated PMSE use. Indeed, BEIRG is generally in favour of 600 MHz remaining as a single lot, rather than being split between several users. PMSE requires continuous access across several channels to operate effectively. If this is removed, the PMSE sector will suffer from a lack of clear spectrum, LTE base station interference, content production will be greatly

affected, and this may subsequently provoke excessive costs to the industry in repurchasing or retuning new equipment. Ideally, BEIRG would prefer the 600 MHz band to be awarded as a smaller, single lot, with a separate, contiguous block of spectrum, dedicated for PMSE use. This block should be allocated on the basis that PMSE is its primary user and should consist of at least 3 contiguous 8 MHz channels.

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, rendering the increased mobile broadband levels unnecessary and impacting on the service quality received. Content creation comes before content delivery. This fact should not be underestimated, or ignored.

The European Commission should also consider the impact that new mobile services (4G) will have on the existing harmonised band, 863-865 MHz, which testing has indicated will be rendered unusable for wireless microphones. It is essential that a decision is made in a timely fashion on how to increase the quantity and quality available to PMSE across Europe. At present, however, we believe additional research needs to be undertaken on this area, and urge the European Commission to carefully consider how it intends to plan the future use of the 700 MHz band.

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 APWPT, 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. See their website here <http://www.apwpt.org/>.