BEIRG
BRITISH ENTERTAINMENT INDUSTRY RADIO GROUP

Ofcom Consultation

British Entertainment Industry Radio Group (BEIRG)

Mobile Data Strategy Response

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Mobile Data Strategy

British Entertainment Industry Radio Group Response

Executive Summary

The British Entertainment Industry Radio Group (BEIRG) has a number of concerns relating to Ofcom's planned Mobile Data Strategy, as set out in the consultation response below. Critically, we believe that the Programme Making and Special Events (PMSE) sector should be better recognised and better supported in any future spectrum planning.

Demand for spectrum in the UK from PMSE, mobile data providers and other sectors is extremely high, and growing. Any changes to spectrum allocation which affects the ability of these industries to operate, whether through interference, shared access or any other threat, risks diminishing their contribution to society and reducing their capability to provide a range of benefits to consumers. BEIRG believes that Ofcom 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.

- Ofcom's proposed mobile data strategy must fully recognise and support the requirements of PMSE
- BEIRG is not in favour of Ofcom allocating any more spectrum for mobile data use at this time
- Incumbent users of spectrum, especially PMSE which has no alternative spectrum to move to in order to meet demand, must be favoured over new services as part of any strategy
- A balance must be struck between mobile data demand, and content production
- Any changes to spectrum allocation which will affect the ability of PMSE to operate risks diminishing its contribution to society, and will reduce its capability to provide a range of benefits to consumers, including content delivered by mobile data
- BEIRG urges Ofcom to require mobile data providers to re-farm currently held spectrum. This would increase the efficiency of spectrum used for mobile telecommunications, negate the need for further spectrum auctions and would be a viable alternative to further clearances
- BEIRG supports improved communications technology and greater innovation, however it is important that these do not come at the expense of established industries which already provide a valuable and essential service to citizens and consumers
- If PMSE is moved once more, for instance from 700 MHz, Ofcom needs to take into account the cost of PMSE equipment that will become obsolete, and the industry will require an associated compensation scheme to alleviate any costs associated with relocation
- The future may see most consumers prioritise Wi-Fi over mobile broadband; Ofcom must consider the impact of alternative delivery services, and consider how they could be better utilised, before acting too hastily to allocate greater amounts of spectrum to mobile data at the expense of incumbent users

The Importance of the PMSE Sector

The economic and social importance of PMSE, and the creative industries which rely on it, is enormous and growing. In the UK, latest government figures show the creative industries to be responsible for 1.7 million jobs, and a £71.4 billion annual contribution to the UK economy[1]. 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 15 million visitors from across the world each year. 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. Yet these industries are threatened by the continuing push for spectrum by mobile providers. This has squeezed the quantity of spectrum available to our industry, and brings with it the danger of harmful interference from mobile use.

The Threat to PMSE

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 diminished. 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 that causes a wireless audio failure has severe repercussions for both the production and the audience alike. Ofcom must ensure that any new mobile services are carefully introduced and recognise, respect and co-exist with PMSE users. Ofcom must also ensure that mobile services use spectrum that they already hold as efficiently as possible, to ensure fair usage for all.

The PMSE industry in the UK has already faced serious upheaval over the past decade, as a consequence of Ofcom's past mobile strategy. The clearance of the 600 MHz and 800 MHz bands has placed a serious financial burden on the industry. The threat of interference from unlicensed White Space Devices (WSDs) (which would compete with cognitive systems for PMSE) and the proposed clearance of the 700 MHz band for mobile use 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 prime venues across the UK. To combat this threat, Ofcom must find a permanent, protected home for PMSE alongside its ongoing mobile data strategy. BEIRG is keen to work with Ofcom to establish the location of such a home. 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.

[1] Department for Culture, Media and Sport, *Creative Industries Economic Estimate* (14 January 2014), available at: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/271008/Creative_Industries_Economic_Estimates_-_January_2014.pdf

Future Spectrum Planning for Mobile Use

BEIRG is **not in favour of Ofcom allocating any more spectrum for mobile data use** at this time.

Instead, we continue to 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 the growing demand, would be far more constructive. Ofcom must urgently take into account the potential of refarming in securing greater spectral efficiency. Alongside this, Ofcom must devise a plan which will protect the long-term future of PMSE in the UK, to help our sector to invest and to grow alongside new mobile services. Constant speculation and consultation undermines the PMSE industry.

We recognise that mobile broadband and other services will bring benefits to consumers in the future, and also recognise the ever-increasing demand for spectrum. However, the introduction of new services and future management and frequency planning cannot come at the expense of incumbent users. Industries reliant on spectrum, such as PMSE, must be recognised and taken into account. Ofcom must plan for the long term across **all** industry sectors. There is currently no alternative spectrum into which PMSE users could move. Therefore under a new spectrum planning model, incumbent users, including PMSE, should be favoured ahead of any new mobile services. Alternative spectrum management and refarming can ensure adequate spectrum access for these services. Consequently, BEIRG would like further reassurance that Ofcom's proposed Mobile Data Strategy will fully recognise and support the requirements of PMSE, and will have no detrimental impact on our industry.

BEIRG is supportive of allowing consumers increased access to wireless broadband. However we do not believe that the only means of delivering this is through altering UK spectrum allocations to allow for more spectrum to be offered to mobile services. Nor is this the most cost-effective solution. Ofcom must consider alternative delivery methods and fully assess the various opportunities and technologies available to meet increased demand for mobile services and to deliver increased broadband access. For example, Wi-Fi connected to fibre optic cables is a viable alternative. Only having done this should Ofcom consider allocating greater volumes of spectrum to mobile network operators to the disadvantage of citizens and consumers. Consequently, BEIRG is in favour of encouraging telecommunications companies to farm their already held spectrum more effectively, as applicable to its propagation characteristics. This would allow better use of UHF bands and relieve the pressure on efficient sub-1 GHz spectrum users, such as PMSE.

Refarming could be complimented with additional base stations for the bands already held by mobile operators. This would remove the need for further spectrum allocation and improve spectral efficiency, thus reducing spectrum pollution (including out of band energy) for mobile and other spectrum. UHF spectrum operates over long distances, whereas a high band has a smaller propagation more appropriate for networks operating with additional base stations.

Previous decisions to extend mobile broadband spectrum access, rather than encouraging the reuse of existing resources, did not encourage the mobile telephone industry to use spectrum efficiently. Whilst PMSE is an efficient user of spectrum, able to utilise interleaved spectrum and to operate alongside other users such as DTT, mobile telephone technology is, at present, not. BEIRG believes

that it should be possible for mobile companies to ensure adequate mobile broadband coverage with the level of spectrum access that they currently enjoy. Before finalising a new planning model, Ofcom should look to model the outcome of a refarming effort by the mobile companies, and ensure they comply with this to achieve the greatest possible level of spectral efficiency. Additional spectrum allocation for mobile broadband is therefore not needed at this time.

The 700 MHz Band

One major area of contention related to future spectrum for mobile data is the long-term future of the 700 MHz band. This consultation identifies this band as a prime location in which to cater for the growing demand for mobile data.

However, **BEIRG does not accept that there is a need for the 700MHz band to be cleared of existing incumbents**. No formal decisions were reached at WRC-12 with regard to the future of UHF Bands IV and V, and BEIRG does not believe that widespread spectrum clearances should be undertaken. Release of 700MHz as early as 2018 should certainly not be considered.

As identified above, 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.

Not only is the release of the 700MHz band unnecessary, but any change to spectrum allocation with such short notice would cause a major upheaval for PMSE, wider broadcast industries, and for citizens and consumers. It is a decision that should not be made with undue haste, despite the mobile sector's desire for this to happen as quickly as possible. A change will require members of the PMSE sector that currently operate in this band to replace their equipment, as it will be rendered obsolete by the clearance. Users will require sufficient lead-in time to make such changes. Many of these members have already been forced to purchase new equipment as a result of the Channel 69 clearances. To expect the industry to do so again so soon is unfair, unworkable and financially unviable. Given the situation at the time, many professional PMSE operators bought 700 MHz compatible equipment – equipment that is now at risk of being rendered redundant, well ahead of its expected life span.

If 700 MHz is to be cleared for mobile data use, a formal compensation scheme would be essential. **80% of recent professional equipment sales have been in the 700 MHz band.** Being able to use new equipment, with a fifteen to twenty year life span, for only **six years** before new purchases must be made as a result of spectrum clearance, is unacceptable to the PMSE sector. Our industry **cannot afford this uncertainty**, and faces declining sales and a lack of confidence as a result. To be truly effective, and to ensure future continuity of PMSE services, any compensation scheme needs to take into account alternative frequency band allocations that can be dedicated to PMSE in the longer term.

By releasing additional spectrum to mobile companies, citizens and consumers would face a number of negative impacts. As previously identified by Ofcom, this would include the costs of altering or replacing equipment currently used to receive DTT. Examples include the replacement of interference filters in domestic and commercial aerial installations and a loss of spectrum to cable TV systems. Likewise, it is probable that the UK would also see a loss of TV content injected into communal aerial systems. Unlike during the Digital Switchover, on this occasion consumers will not be offered any additional benefits for replacement of equipment.

Alternative Delivery Mechanisms

We are not convinced that demand for mobile will necessarily increase exponentially. However, even if an increase in demand does take place, the content which will fuel this increase will be produced by PMSE. The very product which will drive demand for mobile data will therefore be harmed if PMSE is increasingly constrained by ever decreasing spectrum access and interference. Without PMSE, audio-visual mobile content will decline in quantity and quality, no matter how much spectrum is allocated to mobile broadband. A balance must therefore be struck between mobile data demand, and content production. PMSE, as a growing industry, must be allowed to continue uninhibited. The mobile telecommunications industry, conversely, is not at present asking for any additional spectrum and is not ready to release any additional mobile broadband services. Nor are these companies likely to be able to offer a great amount of money to purchase spectrum if it is offered.[2]

In terms of delivery, EE's rollout of 4G has already shown that the cost of access is too great, and the quality of data is not as high as that received over Wi-Fi. And this cannot be ascribed to a current lack of market competition – the experience of South Korea is that the cost of 4G is too great for consumers, despite unprecedented demand for data.[3]

In the UK, the extent to which 4G will be able to meet an increased demand for mobile data, and the associated benefits to consumers of the platform, will be heavily dependent on cost. Compared to Wi-Fi, LTE provides mobile users poorer data quality at higher cost. While BEIRG expects that quantities of video and audio data consumption on mobiles will increase in the future, more consumers may opt to use services on Wi-Fi, as a preference to mobile broadband, due to its lower cost and better quality. This may result in the potential take-up of the 4G rollout (and subsequent generations of mobile broadband, such as 5G) not being realised, because of the ever increasing availability of alternate services. Further to this, no mobile operators have announced what they intend to provide to future mobile broadband consumers other than data. Therefore, the services on offer and the term 'data' also need better definition before the benefits can be studied.

Mobile users already offload onto Wi-Fi to make landline calls, which uses mobile radio spectrum to transfer data. As a more efficient, reliable and better quality means of data transfer, this raises the question of how much more spectrum the mobile community actually needs in future. Use of Wi-Fi could allow for a much larger capacity and faster throughput of data. BEIRG believes that, as a

[2] BBC Website, TV broadcasters fear digital frequency spectrum battle (20 January 2014) (Accessed 21 January 2014), available at http://www.bbc.co.uk/news/business-25799928

[3] BBC Website, *Mobile World: South Korea warns of 4G curse* (26 February 2013) [Accessed 17 January 2014], available at: http://www.bbc.co.uk/news/technology-21579503

consequence, Wi-Fi use will grow exponentially. It is not unfeasible to expect a 1,000-2,000% increase of Wi-Fi traffic over the period 2015-2030. Therefore, no further UHF spectrum should be allocated for mobile broadband until more about the future delivery mechanisms of content is known, as no long-term consumer benefits can be adequately identified from the 4G rollout to date with regard to data consumption.

The use of mobile networks will increasingly require a higher capacity in small physical areas, in particular in urban environments. BEIRG believes that spectrum above 60 GHz should therefore be considered as an alternative for mobile broadband, as it would be more efficient than the UHF spectrum envisaged for use by mobile operators currently. This should be examined as a priority, before the UHF band is completely divided up. It may well offer a more practical and efficient solution.

It should therefore be noted that mobile broadband is only one mechanism for data delivery, and an inferior mechanism than wired. A wider range of bands must be studied as alternative spectrum for data use. The use of wired Wi-Fi systems should be encouraged wherever possible to facilitate data delivery. 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 Ofcom'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.

Conclusion

BEIRG believes that the PMSE sector must be better recognised and better supported as part of all future spectrum planning. This sector is of massive economic and social importance, and continues to grow and provide social, cultural and financial benefit to UK PLC.

Further allocations of UHF spectrum for mobile broadband will heavily affect the ability of the creative industries to operate. This is especially true as PMSE has already undergone such a high degree of upheaval in the past and has no alternative bands in which to move. The industry needs confidence in Ofcom, and reassurance that its long term future will be secure. Therefore, BEIRG is not in favour of Ofcom allocating any more spectrum for mobile data use at this time.

BEIRG recognises the increased demand for mobile broadband amongst consumers, but notes that the audio-visual content which is in demand is provided by PMSE. Therefore, a balance must be struck between mobile data demand and content production, and this must be factored into a future mobile data strategy.

To encourage spectral efficiency, BEIRG urges Ofcom to require mobile data providers to re-farm their currently held spectrum. This would help reduce the demand for further spectrum clearances and reallocations, and relieve the pressure on incumbent users. Further to this, the future may see most consumers prioritise Wi-Fi over mobile broadband as a lower-cost, higher quality alternative. Ofcom must consider the impact of this and other alternative delivery services, such as spectrum above 60 GHz, and how they can be used to meet demand, before excessive amounts of spectrum are cleared for mobile data use at the expense of incumbent users.

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), 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.