



BEIRG response to Ofcom's Call for Input on UK preparations for WRC-23 – Agenda Item 1.5

British Entertainment Industry Radio Group

Introduction

The British Entertainment Industry Radio Group (BEIRG) strives to maintain access to sufficient quantity and quality of interference-free spectrum required by the 'Programme Making and Special Events' (PMSE) sector.

PMSE uses essential wireless production tools such as wireless microphones and wireless in-ear monitor (IEM) systems across a diverse range of applications in everyday life.

PMSE is often regarded as a small niche sector that just involves microphone manufacturers, rental companies, venues, production companies and engineers. The reality is vastly different and in fact PMSE access to spectrum is instrumental in delivering a wide array of events that support a huge proportion of businesses, services and consumers on a daily basis.

The ongoing squeeze on PMSE spectrum allocations, and absence of spectrum policy to deliver security for PMSE applications impacts a far wider ecosystem than those listed above. As an example, the inability to produce a TV production such as Strictly Come Dancing would not only impact millions of TV viewers, jeopardising one of the BBC's programming jewels, but it would also undermine the business of the costume & make up teams, sound, lighting & video companies, staging companies, musicians & performers, and the many technical engineers required across all of these disciplines.

Consumer demand for content has driven huge growth in TV production, film production, theatre, sporting events, political conferences, business events, news gathering and interviews, live music concerts and festivals, state events, education, safety of life communications systems, etc. With a shift from linear viewing or consumption to interactive on-demand services that satisfy the consumer appetite for better quality data and coverage, the reach of every single PMSE supported event has become global



ASSOCIATION OF INDEPENDENT PROMOTERS





PMSE equipment is critical to content creation, because without clean audio at the point of capture, the delivery to audiences is compromised. Historically the audience may have been constrained to live theatre or music events, but today every part of daily life relies on technology to deliver high-production values to global audiences across an endless list of applications. In every single instance, the content created in each application will be performed, recorded, streamed and beamed to live audiences, remote locations or online audiences globally, reaching millions, if not billions daily.

This growth in turn also feeds the explosion in digital content being delivered via the mobile platforms, and productions like the one outlined above generate significant export revenue too, increasing both the hard and soft power of the UK.

With the above in mind, it is vital that Ofcom recognises that BEIRG represents the needs and concerns of the whole ecosystem described above, and is supported by industry technicians, suppliers and trade associations including all of the BEIRG supporters featured here. To learn more about these companies and organisations, just click on the logos to visit their websites.



BEIRG response to Ofcom’s Call for Input on UK preparations for WRC-23 – Agenda Item 1.5:

- **to review the spectrum use and spectrum needs of existing services in the frequency band 470-960 MHz in Region 1 and consider possible regulatory actions in the frequency band 470-694 MHz in Region 1 on the basis of the review in accordance with Resolution 235 (WRC-15);**

Question 7:

What are your views on the proposed approach for 470-694 MHz, recognising the national decisions already in place and taken for DTT multiplex licensing in the band, and the additional and supplementary spectrum made available for UK PMSE usage?

BEIRG would like to thank Ofcom for the opportunity to provide our views and input to the UK preparations for the World Radio Conference 2023 (WRC-23). This response primarily focuses on WRC-23 Agenda Item 1.5 and BEIRG is pleased to see that your preliminary view is to support a “No Change” position on this Agenda Item.

However, in our view the position is not as definitive as it could be with Ofcom stating that it is prepared to discuss (and perhaps concede) to a change in the Radio Regulations to support a primary allocation to the Mobile Service (co-primary with Broadcasting) to allow “greater flexibility” for those countries wishing to introduce mobile services into the band. This weakens Ofcom’s stance and does not provide the Programme Making and Special Events (PMSE) sector with much confidence that the position for No Change will be robustly defended.

Our view is that the Radio Regulations and the Geneva 2006 Regional Agreement for digital television broadcasting already provides the necessary flexibility for any country in Region 1 to introduce Mobile Services. In fact, Ofcom highlights this flexibility in relation to other Agenda Items set out in the CFI.

Flexibility in spectrum management

As Ofcom explains in Paragraph 2.4, the Radio Regulations are part of an international treaty that sets the framework for management of the radio frequency spectrum, and countries reserve the sovereign right to manage and use spectrum within their borders as they wish, subject to not causing interference to other countries’ use (where such use is in accordance with the Radio Regulations). This is well-understood and there are many examples where countries have made individual spectrum allocations and frequency assignments to satisfy their national needs that are contrary to the Radio Regulations.

As noted in para 4.2.5, under Agenda Item 1.2 there is consideration for IMT identification of the 3300 to 3400 MHz band. In the Table of Allocations this is identified only as a primary allocation for Radiolocation Service (in Region 1), i.e. there is no allocation to the Mobile Service. However, several countries have exercised their sovereign rights and flexibility in the Radio Regulations to allocate the spectrum to IMT (noted under Footnote 5.429B) without the need for an allocation to the Mobile Service in this band. This confirms the view that a co-primary allocation (to the Mobile Service) is not needed for any country to introduce IMT into their markets in any band.

In addition, we note in the CFI that Footnote 5.429B limits IMT to those countries located south of the 30° parallel north to protect radar use in “many European countries, including the UK.”¹ On this Agenda Item Ofcom has an unequivocal position to oppose changes to the Footnote or to have an IMT identification in Region 1 (and consequently an allocation to the Mobile Service), in order to protect our national spectrum requirement related to radar use. In addition, Ofcom does not express a recognition to consider arguments with respect to “greater flexibility through the addition of a mobile allocation and possibly IMT identification in the band”² in this case. This is inconsistent with the language used in relation to Agenda Item 1.5.

As Ofcom states in 4.3.1, use of the 3600 to 3800 MHz band for 5G (IMT2020) is not reliant on (regulatory) action at an international level, and that current 3GPP technical specifications include the band within the wider 3.3-4.2 GHz range, and consequently IMT equipment is readily available. This suggests that the principal requirement for the introduction of IMT into any particular band is more dependent on 3GPP standardisation work and subsequent equipment availability than regulatory activities at World Radio Conferences. In this respect we note that the 600 MHz band is standardised in 3GPP (LTE Band 71 or n71 for 5G) and is available in equipment. Therefore, there is no argument that a primary allocation is needed to promote regulatory certainty for investment as the equipment ecosystem already exists.

In the UK, the 3.6-3.8 GHz band has been awarded for public mobile (IMT) services. We note that the current ITU allocation in this band for Mobile is as a secondary service in Region 1 (and not identified for IMT). This further demonstrates that flexibility already exists and that a co-primary allocation is not necessary for countries to introduce IMT.

UK policy in UHF/Agenda Item 1.5

In the CFI, Ofcom has set out a clear national position on the need to maintain terrestrial television broadcasting in the band and highlights the Government’s decision to allow the renewal of five national Digital Terrestrial Television multiplex licences until the end of 2034. However, there are several issues stemming from the language used in the CFI that cause us concern.

PMSE and DTT

Ofcom’s plan of work for 2022/23 highlights the importance of UK media to ensure audiences can continue to enjoy a range of “original content” that represents the people and communities in all parts of the UK. The role of PMSE is fundamental to developing this original content that Ofcom acknowledges as crucial to citizens and consumers across the UK.

The radio applications and services that support the production of content across a range of activities including programme and film making, live events, business and educational use, cultural and social events, is itself a hugely important sector within the UK deriving significant economic and social benefit. Characterising PMSE access to spectrum as a footnote to the future of DTT is becoming increasingly untenable and shows a lack of understanding of the intrinsic value PMSE brings.

While we recognise the work Ofcom has done over the years to support the PMSE sector, put simply, Ofcom needs to elevate its view of PMSE from being an afterthought dependent on policy issues relating to DTT to being considered as a primary application in its own right.

Ofcom’s position on Agenda Item 1.5 is not robust

¹ See paragraph 4.2.5

² See paragraph 5.1.9

In setting out the national position on the 470 to 694 MHz band, the CFI highlights that maintaining our DTT broadcasting rights could limit the potential for geographically close European countries to deploy mobile broadband in the band because of the interfering levels from our high-power broadcasting assignments. Potentially, this constraint could extend beyond neighbouring countries as any changes one country makes to its broadcasting network (to introduce IMT) could propagate across several countries as consequential DTT frequency changes are made in each country in response to the initial change.

This scenario raises the risk that the UK may come under pressure to make changes to its broadcast network to allow for the deployment of mobile broadband in another country. While the probability of this risk might be low, allowing a co-primary allocation in the band increases the legitimacy of any such pressure. Our view, therefore, is that it is in the UK's interests to unequivocally support a "No Change" position to protect our national policy position on TV broadcasting and reject any proposal for a co-primary allocation to the Mobile Service.

This would be consistent with the approach detailed in the CFI (paragraphs 4.2.5 and 4.2.6) with respect to Ofcom's position on the 3.3 to 3.4 GHz band, i.e. "No Change" to protect our national position for ongoing use of the band for radar. As highlighted by Ofcom, and recognised by BEIRG, this would not prevent any country exercising its sovereign spectrum management rights to introduce IMT and would protect the UK's position for continued use of the spectrum by DTT and PMSE.

Ofcom outlines in the CFI that several European countries are in a similar position to the UK with respect to the need for continued access to the 470 to 694 MHz band for DTT. BEIRG is of the view that a 'non-negotiable' position for "No Change" by Ofcom (particularly in CEPT discussions) will show leadership and provide the best outcome to support our national needs.

Access to additional spectrum

The text in Paragraph 5.1.5 demonstrates a lack of understanding of PMSE, its processes and technologies and the work carried out to significantly improve spectrum efficiency.

Paragraph 5.1.5 starts by setting out the position that digital broadcasting is more spectrally efficient than analogue broadcasting; goes on to say that PMSE continues to use analogue technology (implying that PMSE is inefficient), and because of this inefficiency the reallocation of the 700 MHz band necessitated making available additional spectrum. This shows a misunderstanding of PMSE technology and is a misrepresentation of the rationale for making additional spectrum available for PMSE.

Digital wireless microphones from various manufacturers have been on the market for many years, and high-end systems used in those events impacted by the loss of the 700 MHz band are very spectrally efficient. The situation for in ear monitors (where music and/or a performer's voice is fed back to them via an earpiece) with issues such as latency is far more complex than microphones and are generally still analogue.

Ofcom's analysis of the impact of the loss of the 700 MHz band on PMSE, as set out in the consultation on future use of the 700 MHz band in May 2014³, took a representative sample of events with high PMSE channel counts (peak demand events), and looked to replan these into the remaining spectrum below 694 MHz assuming an indicative post-clearance DTT frequency plan.

Using the most spectrally efficient equipment and frequency planning processes available at the time, the analysis concluded that for "very large events with a high count of simultaneous (or near-simultaneous) co-located assignments, even under ideal conditions, the supply of spectrum would not be adequate". The

³ https://www.ofcom.org.uk/__data/assets/pdf_file/0025/28492/consultation-future-use-700MHz-band.pdf

analysis also noted that because spectrum availability varies by location (because of overlapping DTT transmissions), “there is a risk that in some areas spectrum supply might be sufficiently low that some events might fall into the critical category. This impact would be especially acute in the case of touring shows...”.

It was based on this analysis, and not any implied inefficiency of the PMSE sector, that additional spectrum was made available to mitigate the loss of the 700 MHz band and allow production quality to be maintained and allow for growth.

Access to harmonised spectrum

One of the key benefits of the 470 to 694 MHz band is the universal availability of the band across CEPT and many countries globally. This brings significant benefits to the PMSE sector, including access to equipment from a broad range of suppliers and the ability for events to tour through different countries.

In relation to the additional spectrum Ofcom has made available, specifically the 960 to 1164 MHz band (which was made available to mitigate the loss of the 700 MHz band), BEIRG notes that this spectrum is successfully used across a range of events and venues but is currently a UK only solution. Ofcom should look to promote wider adoption of this band and also consider making other spectrum available that has been identified for PMSE use, for example the 1350 to 1400 MHz band listed in ERC Recommendation 25-10.

Conclusion

History has shown that in the past, there are occasions when Ofcom has perhaps taken a relaxed view of highlighted future issues ahead of WRC’s and for those issues and risks to be proven genuine.

In recent comments Ofcom underlined its position for “No Change” on Agenda Item 1.5, and that the situation in this case is different to that with the 700 MHz band as the UK does not see a need for the 470 to 694 MHz band, or parts of it, to be reallocated for mobile broadband. This is consistent with the view presented in Ofcom’s discussion document on meeting demand for mobile data, published in February 2022.

While BEIRG welcomes this, history has shown that things can change rapidly. We are of the view that a firm “No Change” is in the best interests of the UK’s national position.

For further information please contact the BEIRG Steering Committee: hello@beirg.org