

Ofcom Consultation

British Entertainment Industry Radio Group (BEIRG)

Strategic Review of UHF Band 1 and Band 2 - 410 to 470 MHz

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PMSE in the 410-470 MHz bands

The 410-470 MHz bands are used extensively in PMSE for narrow band radio communications known as talkback. UHF 2 (450-470 MHz) is particularly crucial to the industry and accounts for the vast majority of talkback channels. The band is the lifeblood of TV and film production as well as many theatre productions and other live events. Timely and effective wireless communication with the crew – be they audio, video, lighting, props, or stage management – is crucial to the success and safety of live events. Complex events require talkback to ensure not only the smooth running of a production, but also the safety of all those working backstage; crew, cast, orchestra etc. The UHF is the only band that provides the right conditions for this application and has the right technology available. The continuing importance of the 400MHz band to the PMSE industry cannot be overstated. For this reason, Ofcom should continue to monitor the use of UHF bands 1 and 2 to ensure that PMSE has sufficient access to quality spectrum to cater for the talkback requirements of broadcasters, theatres, and special events.

Increased usage of the band by other users (for instance for the Internet of Things) must not diminish the quantity or quality of spectrum available for PMSE. This is especially important now that the 700 MHz band is

being cleared for mobile data use which will lead to increased congestion in the remaining 470-694 MHz spectrum, meaning that it will not be able to accommodate any migration of talkback devices from UHF bands 1 and 2.

Ofcom should also be mindful of the potential for applications to migrate the other way – from the 470-694 MHz band into the 400 MHz band – after the clearance of the 700 MHz band. One possible way to alleviate congestion in the 470-694 MHz band after the clearance could be to move all talkback into UHF 1 and 2. We do not necessarily anticipate that there will be much migration into the lower UHF as the vast majority of talkback is already in UHF 1 and 2 and those that are not rely on the audio quality of equipment available in the 470-694 MHz. For example, television presenters who make heavy use of earpieces would be (and are) resistant to going back to the lower quality narrowband talkback available in UHF 1 and 2. However, without finalised spectrum maps of the 470-694 MHz post-clearance or any guarantee that manufacturers will be producing equipment for the recently allocated 960-1164 MHz band, it is impossible to know what measures will be necessary to keep the most spectrum-intensive events running.

Digital equipment

BEIRG welcomes Ofcom's recognition that while digital equipment can deliver greater spectral efficiency, it is unsuitable for a range of applications. This is particularly true of PMSE, which requires timely, latency-free communications to ensure the safety of crew members and to keep all aspects of a production running in synch. Intelligibility can also be a concern with some digital communications, with speakers not sounding like themselves. The PMSE industry is always looking at ways to increase its spectral efficiency, and has been able to move some applications to digital for this purpose, but digital is cannot be considered a viable solution in this instance.

Changes to licensing and sharing factors

Given that the review does not consider any changes to spectrum management for PMSE, BEIRG does not anticipate an adverse impact on PMSE services in UHF bands 1 and 2. BEIRG can see the benefits of measures to deliver extra use of the spectrum under review. Theatres already encounter difficulties with neighbouring venues sharing the same frequencies and any additional frequencies in these ranges would be helpful. However, BEIRG would like to highlight that the monitoring exercise in May 2016 between the hours of 9am and 5pm, which showed a high proportion of empty channels, will not have accounted for the majority of theatre work which takes place in the evening, possibly leading to the quantity of fallow spectrum to be overstated.

While BEIRG understands that increasing the use of the band is desirable, denser use of the 450-470 MHz band may have implications for the usability of the lower portion of the 470-694 MHz band. BEIRG member Autograph reports that they currently have only two shows in London that make use of Channel 27, and none below. However, after the 700 MHz clearance, productions will routinely need to make use of those channels. With some equipment transmitting at 1 watt on frequencies just under Channel 21, the usability of Channels 21-25 will be questionable.

With the future availability of spectrum for PMSE uncertain, it is essential that Ofcom does all it can to ensure that the remaining spectrum is fit for purpose.

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 audio 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/>