BEIRG
BRITISH ENTERTAINMENT INDUSTRY RADIO GROUP

Ofcom Consultation

British Entertainment Industry Radio Group (BEIRG)

Second consultation on coexistence of new services in the 800MHz band with digital terrestrial television

Date: April 2012

Contact Details:

Fiona Graham
Ranelagh International Ltd on behalf of the BEIRG Steering Committee
One Ranelagh Road
Westminster
London SW1V 3EX

Tel: 020 7828 1603
Fiona.graham@ranelagh-intl.com

Response

BEIRG is a non-profit making organisation set up to represent users of radio spectrum in the Programme Making and Special Events (PMSE) sector. BEIRG's members are involved in the production of all areas of television content, and live performance, at national, regional and local level.

The PMSE sector is a key component of the British entertainment industry which contributes at least £15 billion annually to the UK economy. The sector relies upon wireless equipment such as microphones, in-ear monitor systems, talk back and instrument systems. It is important to note that this type of equipment is used in many other industry sectors, not just the entertainment industry. Over the last 50 years such technologies have largely been utilised in television and radio programming, however increasingly high levels of audio quality and ease of use has also led to their deployment across a much wider array of event production. Theatres, film, broadcasting and live sports events all rely on PMSE equipment for production of their content.

What is essential for PMSE users is that they are able to access clean, interference free spectrum.

Until 2012, PMSE users have operated mainly, though not exclusively, in the 800MHz spectrum now earmarked for auction. These users are being cleared from this spectrum; however licensed users will continue to operate in the interleaved spectrum (or White Spaces as they are now frequently referred to) below 790MHz. Non-professional users continue to rely on access to 'Channel 70' (863-865MHz) on an unlicensed basis.

BEIRG is extremely concerned that no formal mitigation or compensation scheme is being established for PMSE users who experience interference from new services in the 800MHz band. PMSE is at significant risk of interference from the new services - any interference to professional PMSE services is unacceptable. Interference has a significant financial cost, if live shows are cancelled and consumers refunded their ticket price. For DTT viewers, interference with PMSE equipment will disrupt their programming at its source. More information is needed on how Ofcom intends to guarantee that there is no interference suffered by PMSE users in channels adjacent to the new mobile services. BEIRG has responded to the consultation running alongside this, however due to the inextricable links between PMSE and DTT services, BEIRG believes PMSE should be included in this consultation and the MitCo.

BEIRG does not agree with Ofcom's stated view that interference in channels 59 or 60 will not "have a material impact on the availability for spectrum for PMSE use". Production demands are expanding and PMSE access to spectrum is extremely limited, losing another 2 channels in certain areas will exacerbate this problem further. BEIRG is also concerned that interference from new services may affect channels further down the spectrum than 59 and 60, and seeks Ofcom's reassurance that this will not be the case.

Ofcom has acknowledged that there may be instances where PMSE use of channels 59 and 60 will experience interference. The impact of any interference to the PMSE industry would be extremely damaging. Technical licence conditions must be applied to licences for the 800MHz spectrum to prevent interference to PMSE. BEIRG believes that mitigation techniques, similar to those applied for DTT can be provided by MitCo for PMSE users.

Mitigation options

Re-tuning of PMSE equipment should be funded by MitCo where possible. At some locations there may be alternative UHF spectrum available. Depending on the type (make and model, age) and quantity of PMSE

equipment in use, and the spectrum available, mitigation may be possible by simply re-licensing and tuning the equipment to different frequencies away from interference. However this is the best possible scenario and is unlikely to apply to the majority of affected users. In some cases the type (make, model and age) and quantity of PMSE equipment in use and the spectrum available will mean that 're-tuning' is only possible by re-engineering or replacing the equipment. In all of these cases there will be disruption to the PMSE service, and in the case of replacement or re-engineering there will be considerable costs involved.

As with DTT, it is possible that in some cases the application of base station filters and additional filters in the PMSE receive antenna system may be a solution. However, receive filters will not be an option in all cases, particularly where interference is caused to In Ear Monitors (IEM). The filters supplied for use in DTT installations will not be suitable for a number of reasons, including connector type and impedance mismatch. In the case of active receiving antennas, which are common in radio microphone systems, any filter would need to be incorporated in to the design of the antenna since the active part of the antenna could otherwise be subject to overload and intermodulation. Any filter applied subsequently in the RF chain would be ineffective. In practice this would mean replacing the active antennas with an equivalent type already incorporating suitable filtering, if such a device exists. As with the DTT case, base station filtering alone, though beneficial in reducing the radius over which interference is likely to be caused around a base station site is unlikely to be effective as a mitigation solution on its own in every case.

Portable or Temporary Cell sites are commonly deployed to improve coverage and /or capacity at or around the locations of sporting and cultural events which are themselves often peak users of PMSE services such as wireless microphones and IEMs. These are sometimes rural locations which otherwise outside the period surrounding the event may have little or no mobile network coverage. In the event that future Temporary Cell sites incorporate 800MHz LTE technology which seems likely, not to say inevitable, then it is imperative that these types of temporary mobile base station must be forced to incorporate the most stringent filtering available in order to avoid out of band / out of block emissions and thereby minimise the risk of causing interference to PMSE and the very event which they are being deployed to serve. Households using DTT reception in the local area may also not be equipped to cope with the sudden arrival of 800MHz LTE base stations, particularly if there are normally no nearby base stations. Since it is impossible to predict with absolute certainty where such events might take place in the future – e.g. before the first Glastonbury festival there had never been a festival at that location; before last year nobody had held a music festival at Carlisle Airport – how will MitCo deal with the possibility that almost anywhere in the UK could be subject to DTT interference from temporary cell sites? Past history is only helpful in predicting events which are likely to be repeated but gives no indication of what, where or when new public events may occur in the future.

For PMSE there is no real equivalent to the DTT option of 'Platform Change'. Replacing wireless microphones with wired ones is not an acceptable solution.

<u>Compensation</u>

Where interference does occur, compensation must be available for affected users through Mitco. Compensation must be offered for those users who:

- suffer interference in Channels 59 and 60, having been issued a licence by the Band Manager and told these channels were interference free in their location, and
- Suffer interference from new mobile services, in other channels further down the spectrum where licences were issued.

This compensation must be sufficient to cover losses incurred (for example the costs of refunding tickets to patrons, goodwill gestures paid, artists return fees, fines for production delays), as well as compensation for reputational damage. The impact of interference on PMSE equipment, and on the downstream production, is extremely damaging and leads to shows being cancelled. People travel from all over the world to visit London's West End theatres, and when shows are unable to go ahead there is a significant reputational impact on this important part of the UK tourism industry.

During the clearance of the 800MHz band the PMSE industry has suffered significant financial and operational upheaval. 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 Ofcom has a responsibility that the PMSE industry does not suffer interference from new mobile services in the 800MHz band.

PMSE users were told that the reason why the PMSE Funding Scheme did not cater for licensees operating in TV channels 61 – 68 was that they were given adequate notice of the need to vacate these channels. It is a very real possibility that existing PMSE licensees currently using channels 60, 59 and possibly lower will now also have to vacate due to interference caused by 800MHz LTE. Since by definition there will be no DTT coverage in a TV channel at a location where it has been licenced and is currently usable for PMSE then under the current proposals there would be no requirement to protect that TV channel from LTE base station interference at that location even though there may be existing licenced PMSE users whose equipment will be rendered unusable by the new service. For example a Theatre may be currently using radio microphones or IEMs in channels 59 and or 60. Since there must be no DTT on those channels locally, if an LTE 800 base station is installed nearby there will be no obligation to fit additional base station filters or operate at a reduced power yet the theatre will potentially have its radio microphones/IEMs rendered unusable. There may not be any alternative spectrum available within the tuning range of the existing equipment, or indeed at all. In this case it must be the responsibility of the new licensee to cover all of the costs incurred in restoring the PMSE services and any consequential losses resulting in the interim due to the interference.