

Ofcom Consultation

British Entertainment Industry Radio Group (BEIRG)

Future use of the 700MHz band - Implementing Ofcom's UHF strategy - Response

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Contact Details:

Jeremy Burton

Ranelagh International Ltd on behalf of the BEIRG Steering Committee

One Ranelagh Road

Westminster

London SW1V 3EX

Tel: 020 7828 1603

jeremy.burton@ranelagh-intl.com

BEIRG Response: Future use of the 700MHz band - Implementing Ofcom's UHF strategy

Executive Summary

The British Entertainment Industry Radio Group (BEIRG) have a number of concerns relating to Ofcom's planned UHF Strategy relating to future use of the 700MHz band, as set out in this consultation.

Impact of 700 MHz Clearance

- BEIRG recognises that mobile broadband and other services may bring some benefits to consumers in the future, but this should not be at cost to PMSE or any other existing industries reliant on spectrum.
- BEIRG does not accept that there is a need for the 700MHz band to be cleared of existing incumbents at all. Release of 700MHz as early as 2018 should certainly not be considered as an option.
- The impact of allocating more UHF spectrum to mobile broadband on those sectors reliant on PMSE will far outweigh any benefits to citizens and consumers. Incumbent PMSE and DTT users should therefore be favoured ahead of new mobile services.
- If PMSE does not have sufficient access to spectrum, its capability to produce content will be severely hindered. PMSE content creation has gone a long way in fuelling mobile broadband demand – this fact should not be ignored.
- Ofcom also needs to consider the potential social and cultural costs in instances where PMSE is rendered unable to put on events as a consequence of 700 MHz clearance. These are difficult to quantify – but are real and will have consequences for all consumers of content.
- Who will meet the substantial cost to PMSE, to Broadcasters, and to citizens and consumers in general, of a 700 MHz band clearance? Will those costs be justified?
- BEIRG notes, with interest, that a potential band plan for future mobile deployment in 700 MHz has been submitted to the ITU before this consultation on future use of the 700 MHz band has closed.

Industry Upheaval

- The clearance of the 800MHz band already caused the PMSE industry significant financial and operational upheaval.
- Our industry cannot afford further uncertainty, which undermines investment and stifles development.
- BEIRG welcomed continued access to 600 MHz for PMSE until at least 2018, but notes that as a consequence of the delay in making this decision many PMSE users reinvested in PMSE equipment in 700 MHz.
- Ofcom must therefore also take into account the cost of PMSE equipment that will be lost as part of any clearance of 700 MHz. 80% of recent professional equipment sales have been in the 700 MHz band.

- If 700 MHz is to be cleared, a formal compensation scheme would be essential. However, any compensation scheme would be compromised without the identification of alternative bands that PMSE could migrate to. Being allowed only five or six years of use out of new equipment before new purchases must be made as a result of spectrum clearance is unacceptable.

PMSE Spectrum Requirements

- PMSE is at significant risk of interference from the new services - any interference to professional PMSE services is unacceptable. High profile live events depend upon PMSE.
- To ensure guaranteed PMSE operation, the industry requires access to at least 96 MHz as protection from any future clearances.
- Ofcom's proposed arrangement whereby PMSE access to 700 MHz is replaced by access to 600 MHz, is neither suitable, nor practical. The 600 MHz band encompasses less spectrum than 700 MHz, and is not a like-for-like replacement.
- Alternative spectrum needs to be identified to secure a permanent home for PMSE.
- BEIRG believes that it should be possible for mobile companies to ensure adequate mobile broadband coverage with the level of spectrum access they currently enjoy. Why should Ofcom already be planning more spectrum for mobile broadband when services in the 800MHz band are yet to be fully realised, and the take up on already existing 4G services has so far been limited?
- Additional spectrum allocation for mobile broadband should therefore not be needed at this time.
- BEIRG is instead in favour of encouraging telecommunications companies to reallocate their already held spectrum more effectively, allowing greater efficiency and better use of UHF bands.

BEIRG would be willing to assist Ofcom to clarify the current extent and potential impacts on the PMSE industry as part of its future stakeholder engagement.

Consultation Questions

Question 1: Have we correctly identified and characterised the potential costs set out above, and what other costs – if any – should be taken into account in our assessment?

No – Ofcom must also take into account the cost of PMSE equipment that will be lost as part of any clearance of 700 MHz, and any associated compensation scheme designed to alleviate this. Any clearance of 700 MHz will lead to all PMSE equipment that operates in this band being scrapped. In addition, any equipment operating between 470-694 MHz may face potential abandonment as a consequence of the subsequent DTT replan. Our industry cannot afford this uncertainty, and faces declining sales and a lack of confidence as a result. None of these identified costs should be taken lightly as part of a decision on 700 MHz, in particular those that outline the requirement for additional expenditure from consumers

and PMSE users to replace equipment, and the associated upheaval and harm this will cause to our industry.

The impact of allocating more UHF spectrum to mobile broadband on those sectors reliant on PMSE will far outweigh any benefits to citizens and consumers. PMSE, and the creative industries which rely on it, are a growing sector, and are currently responsible for 1.5 million jobs and a contribution of £36 billion annually to the British economy, as estimated by the Department for Culture, Media and Sport¹. Any changes to spectrum allocation which will affect the ability of these industries to operate risk diminishing their contribution to society, and will reduce their capability to provide a range of benefits to consumers. Consumers will be faced with the cost of replacing DTT equipment so soon after the Digital Switchover, to ensure their equipment can still operate. Unlike during Digital Switchover, which brought with it access to Freeview channels and stronger transmission signals in many areas, consumers will not see any marked benefit in paying these costs, which will not bring any additional services with them. Furthermore, Ofcom also needs to consider the potential social and cultural costs to consumers, in instances where PMSE is unable to put on shows, concerts and other events as a consequence of 700 MHz clearance. This cost will be hard to quantify. Clearance of 700 MHz will also cause costs to small organisations, such as schools and churches, who use PMSE on a smaller scale and who will be forced to replace redundant equipment.

What is essential for PMSE users is continuity of access to a sufficient quantity of clean, interference free spectrum. With the 800MHz band having been allocated to mobile companies; available spectrum is becoming ever scarcer as demand for wireless technology continues to increase. PMSE access to spectrum is already extremely limited, with large productions facing constrictions on the shows they can stage. There is therefore a need for new services to recognise, respect and co-exist with PMSE users, to ensure fair usage for all. Additionally, Ofcom must not do anything that will negate their ability to redress any shortfall in current or future spectrum availability for PMSE.

Question 2: What evidence, whether qualitative or quantitative, should we obtain and/or take into account in assessing each of these potential costs? Please identify any sources of specific evidence to which we should have regard.

Ofcom must closely engage with the PMSE industry to take into account fully the extent of the potential impact that releasing the 700 MHz band will have. BEIRG will continue to liaise with Ofcom and participate in its assessment of the PMSE industry to help facilitate this, and ensure Ofcom has a complete picture of the extent of PMSE equipment in operation on quantity of users in the UK. If the 700 MHz band is cleared of PMSE services, causing the PMSE industry to face another major upheaval not long after the 800 MHz clearance, it is essential that a full compensation scheme is established – with adequate alternative spectrum identified. Ofcom should be establishing now how much it would cost to provide full compensation for all equipment rendered redundant by these moves. This should include an industry-wide survey covering, among other things, the types of equipment and quantities in use, the extent to which these will need to be replaced, how much was

¹ See <http://www.culture.gov.uk/images/research/Creative-Industries-Economic-Estimates-Report-2011-update.pdf>

purchased through the Channel 69 compensation scheme and any ancillary costs in replacing this equipment.

Question 3: *Have we correctly identified and characterised the potential benefits set out above, and what other benefits – if any – should be taken into account in our assessment?*

BEIRG recognises that mobile broadband and other services may bring some benefits to consumers in the future, but this should not be at cost to any other existing industries reliant on spectrum, such as PMSE. BEIRG also cannot identify any meaningful benefits to DTT consumers, who are not being offered any additional channels or services as part of the clearance of 700 MHz, as outlined in Question 1 above. Whilst BEIRG supports increased access to broadband, we do not believe that the only means of delivering this are through mobile services, nor is it the most cost-effective solution. Ofcom must first consider alternative delivery methods and fully weigh up the various opportunities and technologies to meet the increased demand for mobile services and deliver increased broadband access (for example, Wi-Fi connected to fibre optic cables), before rushing to allocate greater volumes of spectrum to mobile network operators to the disadvantage of citizens and consumers.

Mobile users already offload onto Wi-Fi to make landline calls, which is used to transfer data over mobile radio spectrum. 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. The future may see most consumers offloading services onto Wi-Fi, as a preference to mobile broadband, especially with increasing amounts of people working from home. Use of Wi-Fi could allow for a much larger capacity and faster throughput of data. BEIRG believes that, as a consequence, Wi-Fi use will grow exponentially. It is not unfeasible to expect a 1000-2000% increase of Wi-Fi traffic over the period 2015-2030.

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 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, and allow PMSE to continue operating at its current level.

PMSE access to spectrum is already extremely limited, with large productions already facing difficulties with production planning. 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. Consequently, any work to reform and increase the efficiency of spectrum used for mobile telecommunications as opposed to further auctions of additional spectrum, must be welcomed and encouraged as an alternative to further clearances. This should be carried out fully before any more spectrum is cleared.

Question 4: *What evidence, whether qualitative or quantitative, should we obtain and/or take into account in assessing each of these potential benefits? Please identify any sources of specific evidence to which we should have regard.*

See answer to Question 2. BEIRG is willing to assist Ofcom to clarify the current extent and potential impacts on the PMSE industry as part of its future stakeholder engagement.

Question 5: *In particular, what is your view of the likely future demand for additional sub-1 GHz spectrum for the provision of mobile data services, and what evidence supports this view?*

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 efficient sub-1 GHz spectrum users, such as PMSE. 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. 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. With the 800MHz band having now been allocated to mobile companies; available spectrum is becoming ever more scarce as demand for wireless technology continues to increase.

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. Additional spectrum allocation for mobile broadband should therefore not be needed at this time. Much more efficient and cost-effective use could be made of this limited resource, and it is therefore imperative that mobile telephone companies make the most of their spectrum holdings, as meeting any likely future demand will be greatly dependent on this. Ofcom should model the outcome of a refarming effort by the mobile companies and ensure they comply with this to ensure the greatest possible level of spectral efficiency, before going ahead with the hugely disruptive and damaging action of a 700 MHz clearance.

Question 6: *Should we place different weights on some costs and benefits than on others, for example depending on whether costs would be borne by consumers, DTT operators, or mobile operators?*

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. Content creation comes before content delivery. This fact should not be underestimated, or ignored.

Incumbent users of this spectrum, including PMSE, which have no alternative spectrum to move to in order to meet demand, should be favoured ahead of new mobile services where alternative spectrum management and refarming can ensure adequate spectrum access for these services. BEIRG is not opposed to improved communications technology and progress in these fields, but these must not come at the expense of existing industries which provide a valuable and essential service to citizens and consumers.

Ofcom must plan for the long term across all industry sectors, and as mentioned previously, BEIRG would support future refarming efforts from Ofcom and the telecommunications industry. 800MHz and 2.6GHz, now auctioned to the mobile companies, must be made best use of in the most efficient way possible, to ensure fair and cost-effective use of spectrum among all industries. BEIRG believes 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, ensuring the efficiency of new services and using alternative transmission platforms. Access to the 700MHz band should not be allowed for mobile broadband at the expense of other existing industries.

Question 7: *Do you have any other comments on the work we are currently undertaking on potential costs and benefits?*

Ofcom must be aware of the potential for interference from any new mobile services or WSDs, which could affect PMSE. Ofcom must continue to study the potential for interference and likely cost impacts before making any decisions on the future of 700 MHz. Future business security is vital for the PMSE industry, so stakeholders know where to invest and where they can be confident the sector will be unaffected by continuing upheavals in spectrum allocation.

Allowing high powered telecommunications users to operate in 700 MHz along with 800 MHz, will present interference issues to PMSE users operating in nearby channels in 600MHz. This will further reduce available spectrum, and have an effect on the benefits industries, such as PMSE, can bring to both citizens and the economy. Furthermore, a replan of DTT would also reduce available channels. It is vital for the continued operation of our sector that we are guaranteed clean, interference-free spectrum. In the event of any clearance and subsequent auctions, the introduction of enforced guard bands within 700 MHz at its lower end, would go some way in alleviating the risk of interference. It is imperative that Ofcom work to ensure that spectrum is managed carefully and appropriate guard bands are provided within part of any new service allocations, and that these guard bands do not further encroach on PMSE spectrum.

Question 8: *Have we correctly identified the costs and benefits that could vary depending on the timing of release, and the impact of those factors? Are there other costs and benefits which would vary depending on the timing of release of the 700 MHz band which we should take into account?*

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. Making the 700MHz band available for mobile broadband was proposed by delegates from African nations, which have a lower level of broadband infrastructure and less congested spectrum allocation. Whilst using the 700MHz band for mobile broadband may suit their situation, the established spectrum situation in Europe means such a change would not be appropriate for this more mature market. 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 amount of spectrum available to mobile services, and the limited access which PMSE has, no decision should be made on 700MHz until mobile services can prove to be making the best use of their available spectrum.

During the clearance of the 800MHz band the PMSE industry already 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. Uncertainty undermines investment and threatens innovation in developing new products. Any future move to re-allocate spectrum usage in UHF Bands IV and V would be severely disruptive to an already hard-pressed PMSE industry. 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 further disruption.

BEIRG has welcomed the announced extension of access to the 600MHz band until at least 2018. However the arrangement suggested by Ofcom, whereby PMSE access to the 700MHz is replaced instead by access to the 600MHz band, is neither suitable, nor practical. Overall, the 600 MHz band encompasses less spectrum than the 700 MHz band, and is therefore not a like-for-like replacement for PMSE. As DTT becomes more bunched up in its available spectrum, PMSE is forced to contend with less and less spectrum of a lower quality. With growing demand from PMSE services, and an expanding consumer base, PMSE professionals therefore require access to both the 600MHz and 700MHz bands. Access to contiguous bands of spectrum is very important for flexibility as well as quality of PMSE productions. Regional variation in spectrum use causes changing requirements for PMSE which must adapt to local spectrum 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. BEIRG therefore would call for a contiguous block of spectrum, Channels 35-38, to be reserved for dedicated PMSE use.

A Study by the German Federal Network Agency in October 2008² identified that 96 MHz of spectrum was the minimum requirement for PMSE audio equipment to operate productions on a daily basis. This study was carried out in an urban area, and took into consideration the operation of PMSE systems in close proximity to each other. Both practical application and the report show that 96 MHz is required for each of these locations to operate PMSE services without interference or difficulty. It is fair to say that the UK situation is no different. At each performance in the West End there are around 1000 pieces of wireless PMSE equipment in use across all the venues. At the same time news crews and other content producers are also operating in this area, requiring further spectrum access. Furthermore, this study did not include special events, such as Royal occasions, national and international political gatherings and conferences, VIP visits, elections, large open air events, national and international sports events, religiously motivated meetings, parades and more. These would require Ofcom to ensure that a great deal more spectrum is available in order for PMSE to operate successfully.

² <http://www.apwpt.org/downloads/reportonthefrequencyresourcerequirementsofpwms.pdf>

Question 9: *How quickly could the 700 MHz band be released? What would be the impact on DTT infrastructure costs of releasing at the earliest possible time compared to a later time? What would be the factors which affect these costs?*

Release of 700MHz as early as 2018 should not be considered as an option. Not only is its release 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 rashly or 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, which will be rendered obsolete by the clearance, and to do so with insufficient lead-in time. Many of these members have already been forced to purchase new equipment as a result of the channel 69 clearances, and to expect the industry to do so again so soon is unworkable, and would be financially unviable. Again, 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 conceived life span.

If 700 MHz is to be cleared, a formal compensation scheme would be essential. 80% of professional equipment sales recently have been in the 700 MHz band. Being allowed only six years of use out of new equipment, before new purchases must be made as a result of spectrum clearance is not acceptable for the PMSE sector; the industry typically gets between fifteen and twenty years of use out of professional equipment. 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, including the replacement of interference filters in domestic and commercial aerial installations and a loss of spectrum to cable TV systems. Along similar lines, it is probable that the UK would also see a loss of TV content injected into communal aerial systems. As mentioned in Question 1, unlike during the Digital Switchover, consumers will not be offered any additional benefits for replacement of equipment this time around.

Question 10: *How, and to what extent, are the costs for existing (PMSE) and potential (WSD) interleaved users of the 700 MHz band likely to vary depending on the timing of release? What would be the factors which affect these costs?*

See Question 9. It is worth noting once again that a compensation scheme must be established for PMSE users if the 700 MHz band is cleared – with the above caveats regarding availability of alternative spectrum bands. Ordinarily, PMSE equipment has a lifespan of between 15-20 years. It is unacceptable that after only five or six years of use, the industry is facing the possibility of being forced to reinvest in new equipment yet again. If more advance warning were to be given by Ofcom as to the date and likelihood of

potential clearances, along with early notice of new, 'safe' places to move to within the UHF Bands, this may help to mitigate the impact of future changes to spectrum allocation. This would allow for PMSE equipment to be replaced through the natural cycle of equipment purchases in good time to prepare for further changes, rather than force a reacquisition of equipment after only a short period of time following previous spectrum clearances.

In addition, PMSE is at significant risk of interference from the new services - any interference to professional PMSE services is unacceptable. Sustained interference can threaten the ability of a production to deliver a show, which carries with it the risk of large financial loss, and will result in future shows being uninsurable. For DTT viewers, interference suffered by 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.

Question 11: *Should we consider any other cost-related arguments / evidence in favour of an earlier or later release date?*

The wider impacts of a future change of use of the 700MHz band could not be managed in such a way as to prevent all of the damage it would cause to the PMSE industry, and would be detrimental, whatever the timing. DTT will also be affected, as consumers may have to acquire new equipment to maintain access to the services which are currently provided by this industry. Such costs may be incurred through replacing 'lost' services with other delivery platforms capable of utilising DTT's new spectrum allocation, interference free. Alternatively, non-financial costs may also be seen through reduction in spectrum access for DTT, with a reduction or loss of HD and other enhanced TV options, or even loss of TV coverage for some citizens. A detrimental impact of some degree is unavoidable if the services currently operating in this band are cleared.

Question 12: *What would be the impact on mobile broadband delivery and competition of releasing the 700 MHz band later rather than sooner?*

No comment.

Question 13: *Should we consider any other benefit-related arguments / evidence in favour of an earlier or later release date?*

No comment.

Question 14: *Is the range of potential dates for release likely to be wide enough to merit consideration of an incentive auction approach?*

As mentioned in Question 9, above, BEIRG does not accept that the 700MHz band has to be cleared at all, based on the lack of a formal decision made at WRC-12 with regard to the future of UHF Bands IV and V.

Question 15: *If so, what are the challenges to designing an effective incentive auction in this case, and how might these challenges be addressed?*

No comment.

Question 16: *If we followed an incentive auction approach, how should we take account of wider costs and benefits – i.e. those not felt by participants in the auction?*

No comment.

Question 17: *Do you have any views at this stage as to the parameters of an incentive auction, such as the default date and payment mechanism?*

No comment.

Question 18: *Is there a version of the overlay auction approach which could be suitable for 700 MHz release?*

No comment.

Question 19: *What are the benefits and risks of conducting an overlay auction in this case?*

No comment.

Question 20: *Have we correctly identified and characterised the potential impact of 700 MHz release on consumers accessing DTT? What other impact – if any – should be taken into account in order to identify pre-emptive measures to reduce this impact?*

There is a material risk that the DTT platform will have insufficient spectrum to continue to deliver important benefits if it is cleared from 700 MHz, and this risk also extends to all other 700MHz users (such as PMSE and local TV), who will be bunched up and forced out of spectrum alongside DTT by extensive clearance.

BEIRG believes that any movement within spectrum in Bands IV and V will present risks to DTT's ability to provide important citizen and consumer benefits. As previously mentioned, reallocation of spectrum would impact on the other users of 600MHz and current 700MHz users, as their spectrum use is squeezed. Subsequently, this will lead to negative connotations and damage to both PMSE and DTT, and subsequently damage to the viewing population as well (through associated costs, weighed against their benefits).

Question 21: *Do you have any comments on the pre-emptive measures relevant to DTT identified above? Are there other pre-emptive measures we should be considering?*

No comment.

Question 22: *Have we identified the correct measures to support consumer adoption of DVB-T2?*

No comment.

Question 23: *What regard, if any, should we have to wider technical evolution of the DTT platform, such as HEVC?*

No comment.

Question 24: *Have we correctly identified and characterised the potential impact of 700 MHz release on PMSE users? What other impact – if any – should be taken into account in order to identify pre-emptive measures to mitigate this impact?*

BEIRG generally does not believe sufficient weighting is being given to the impacts of these proposals on content production and technical delivery. As stated previously, around 80% of professional PMSE equipment sold operates in the 700MHz band. PMSE users will have to purchase new equipment even if the 600MHz band is available to PMSE. The level of disruption, and the reduction in quantity of spectrum, will severely impact on the PMSE sector and consequently the wider entertainment industry.

With growing demand for PMSE services, and an expanding consumer base, PMSE professionals ideally require access to both the 600MHz and 700MHz bands. Any future denial of access to the 700 MHz band should not be permitted unless alternative bands, with long term security of access, have been identified. 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.

BEIRG will continue to engage with Ofcom to feed into its study on the potential impacts on the PMSE industry.

Question 25: *Do you have any comments on the pre-emptive measures identified above? Are there other pre-emptive measures we should be considering?*

BEIRG believes that Ofcom needs to clarify in greater detail what it means by the pre-emptive measures identified, particularly to “support industry efforts to improve PMSE

equipment". Ofcom needs to acquire a greater understanding of the nature of PMSE equipment, which we hope will be achieved through on-going industry engagement. PMSE equipment is highly specialised, and is not able to simply be retuned or redesigned to operate in other spectrum bands, or to simply cope with constant spectrum reallocation.

As a consequence of the delay in making the decision to allow PMSE services in the 600 MHz band, many PMSE operators have reinvested in PMSE equipment in the 700 MHz band and other areas of the UHF spectrum. This fact should be carefully considered with regards to any future decisions on the 700 MHz band. Compensated PMSE users who duly invested in 700 MHz equipment should not be penalised for equipment investment decisions which, at the time, were made in good faith. Being allowed only five or six years of use out of new equipment, before new purchases must be made as a result of spectrum clearance is not feasible for the PMSE sector; as previously stated, the industry typically gets between fifteen and twenty years of use out of professional equipment. Ofcom must work to ensure that the least possible disruption is caused to PMSE services and operators. If a clearance of the 700 MHz band were put into place, the sector would require a formal compensation scheme far above the recent channel 69 funding scheme.

Consequently, BEIRG calls on Ofcom to investigate as a matter of urgency the possibility of a long-term home for PMSE, allowing for stability in the industry, protection from future clearances and to guarantee the on-going viability of PMSE equipment. BEIRG thinks that the best solution to secure long-term benefits from UHF Bands IV and V would include exclusivity of spectrum use for PMSE (including no white space devices allowed access - at least in certain areas of Bands IV and V). To ensure guaranteed PMSE operation without WSD interference, BEIRG would advise allocating a least 96 MHz to PMSE, as protection from any future clearances. This would require a minimum of two 8MHz band buffers also free from WSDs to ensure a guaranteed level of quality and non-interference.

Question 26: *Do you have suggestions for how we can assess the impact on PMSE users and equipment if 700 MHz is no longer available for PMSE use?*

In the event of 700 MHz clearance, the subsequent replan of DTT in 600 Mhz would lead to a reduction of available channels, and the availability of less and less spectrum for PMSE as DTT use becomes increasingly congested. There is a substantial risk that DTT will have insufficient spectrum to deliver the benefits it currently provides if it is cleared from 700 MHz, if it is forced to share with PMSE, WSDs and other potential users. This will impact on the quality of available spectrum for PMSE, which will suffer unwanted interference and will lead to limitations on the shows that can be staged. Cancellations and poor quality productions will become more common if PMSE access to spectrum is further inhibited. To ensure the PMSE industry can continue to thrive in the future, it requires a dedicated long-term home, free from harmful interference and WSDs, and with a sufficient quantity of spectrum to operate in. This will allow for stability in the industry, guarantee the continued sustainability of PMSE equipment, and protect the industry from any future clearances. To ensure this level of guaranteed PMSE operation, the industry would need at least 96 MHz of dedicated spectrum, as protection from any future clearances, including a minimum of two 8MHz band buffers to ensure quality and protection from interference.

It will be imperative for the continued health of the PMSE industry that if the 700 MHz clearance proceeds, a full compensation scheme for those members of the industry who, in good faith, invested in equipment in this band following the clearance of 800 MHz. It is unfair and damaging to the industry to penalise these stakeholders by forcing another move so soon after these first clearances for mobile services. Therefore another full compensation for all equipment rendered redundant by any future clearances will be a necessity – and alternative frequencies outside of the UHF band must be identified and secured for future PMSE use.

Finally, there is a need to investigate further the potential effect that WSD have on interference levels amongst other users. BEIRG would welcome additional tests to fully understand the implications of allowing unlicensed WSDs to operate and the effect that this would have on other spectrum users, especially as PMSE could potential find itself operating in the same spectrum as WSDs in future. This must be taken into account by Ofcom as part of its future planning, to ensure all users have sufficient access to spectrum.

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)³, 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.

³ <http://www.apwpt.org/>