

This is a response to a consultation document regarding the migration of PMSE equipment from the 700 MHz waveband. This response is made on behalf of the Society of London Theatre (SOLT) and UK Theatre, trade organisations representing the interests of those engaged in the production and presentation of medium to large-scale dramatic and lyric theatre in the UK. SOLT represents approximately 200 London-based producers, theatre owners and managers. UK Theatre represents approximately 250 theatres, concert halls, dance companies, producers and arts centres throughout the UK. Both memberships are drawn from subsidised and commercial theatre. Many of the responses given here have involved collaboration with BEIRG.

## Executive Summary

- Clearance of the 700 MHz band has zero benefit and only negative impact on the PMSE industry and in particular on live entertainment.
- The funding scheme should be based on Pascal Lamy's principle that the PMSE sector is left "no worse" off by the 700 MHz clearance. The scheme as currently proposed would leave the PMSE sector significantly worse off.
- There are three areas where the proposed scheme must improve to ensure that PMSE equipment owners and operators are not left worse off by clearance:
- **The scheme must not be based solely on residual value of equipment.** Equipment costs are only a proportion of the costs that PMSE equipment owners and operators will face. Ignoring these costs will result in PMSE businesses struggling to find capital to cover the labour and ancillary costs of clearance and the reinstallation of new equipment. Ofcom should recommend that Government reviews its decision to base the funding scheme solely on residual value.
- **A 47% contribution towards replacement equipment is not enough.** The proposed funding formula makes erroneous assumptions about the way that PMSE companies budget for new equipment and ignores the fact that these businesses are typically cash poor and at the mercy of events outside their control.
- **The eligibility criteria are too narrow, both in terms of equipment captured and type of user.** There will be many instances, particularly among the largest users, where equipment owners have to replace entire systems in order to adjust to the new reality of operating in reduced spectrum following clearance. Excluding sub-694 MHz equipment from the scheme will harm these users. Additionally, it is not only equipment owners who will experience costs, equipment operators such as theatres and studios will be saddled with a cost burden as a result of clearance. Where users are left worse off, they must be compensated.

## Introduction – The principles of a funding scheme

The professional PMSE industry will be negatively impacted and severely disrupted by Ofcom's decision to clear the 700 MHz band. Consequently, SOLT/UK Theatre welcomes the Government's decision to design a funding scheme. However, the scheme as currently proposed does not go nearly far enough and will ultimately leave the industry significantly worse off, contrary to the guiding principle set out in Pascal Lamy's report on the future use of the UHF band<sup>1</sup>—"A decision by a Member State or at Union level to repurpose the 700 MHz band would create costs for reconfiguring broadcasting networks and distribution models as well as upgrading PMSE and consumer equipment, but also probably generate auction proceeds. The broadcasting and PMSE sectors should not be disadvantaged by such a transition and cost compensation should be duly addressed" – and contrary to many discussions SOLT/UK Theatre has had with Ofcom personnel at all levels, including the current and preceding CEOs. Ofcom's own statement in 2014 states the need to ensure the PMSE community is in a position to continue delivering the important benefits it provides today<sup>2</sup>.

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<sup>1</sup><https://ec.europa.eu/digital-single-market/en/news/report-results-work-high-level-group-future-use-uhf-band> point 3, page 12 and point 4, page 11

<sup>2</sup>[https://www.ofcom.org.uk/data/assets/pdf\\_file/0024/46923/700-mhz-statement.pdf](https://www.ofcom.org.uk/data/assets/pdf_file/0024/46923/700-mhz-statement.pdf) paragraph 2.9.2, page 10

The currently proposed scheme is constrained in particular by Government's decision that funding should be based solely on residual value of equipment, despite the existence of significant associated costs and without reference to the way that the industry operates, again despite many conversations with Ofcom personnel at all levels, including current and preceding CEOs. The impact on the industry was well recognised in the 2014 statement in which there are multiple references to associated costs such as training, recruitment, removal of old equipment, the need for upgraded equipment that is more agile and technically advanced<sup>3</sup>. SOLT/UKT recognises that this analysis was undertaken as part of a cost-benefit analysis for the economy, but these are real costs borne by real companies which will be severely disadvantaged by having to bear a financial burden as a result of PMSE services clearing the 700 MHz band. BEIRG is aware that additional costs will be compensated for in the case of businesses involved in DTT infrastructure – why is this not the case for PMSE?

As it stands, providing a 47% contribution towards the replacement of some equipment does not adequately compensate for replacement equipment, let alone the scale of additional costs facing the PMSE industry. As a result, most equipment owners will struggle, and some will fail, to make up the remaining 53%. This will result in compromised production values at best and companies going out of business at worst. This is not an over-dramatic assessment. Freelancers and small companies rely on their equipment as a critical part of their livelihoods, and simply cannot afford to fund the shortfall.

While the scheme as currently proposed would be bad for small scale equipment owners and freelancers, the scheme fails to recognise the different costs that will be experienced by the organisations that own the most equipment as well. The currently proposed scheme is based on a fundamental misunderstanding of the industry – a large majority of the PMSE work that creates content, live entertainment and events is carried out by a few organisations who own the most equipment. An approach based on large scale economic analysis and averages does not reflect the different types of equipment owners and demonstrates at best the desire for an over-simplified, one-size-fits-all solution, and at worst a significant misunderstanding of the industry and how it produces the billions of pounds of revenue for UKPLC. This must not be overlooked and needs to be addressed.

If the resultant scheme is a bare minimum one-size-fits-all approach, there will be no incentive to buy equipment in the 960-1164 MHz band, which in turn means there will be no incentive for manufacturers to produce equipment for the band. This problem is further compounded by the fact that the security of tenure of the remaining 470-694 MHz spectrum is potentially only up until 2030, so industry will again be forced to buy equipment with a life expectancy longer than its potential use cycle from a licensing perspective. Ofcom should reinvestigate the potential for PMSE to operate in areas of spectrum covered by ERC Recommendation 25-10, in addition to the 960-1164 MHz band.

SOLT/UK Theatre believes that trying to save money on the PMSE funding scheme is a false economy; PMSE is a fundamental part of the UK's world-leading creative industries and properly supporting the industry will be paid back through its contribution to the wider economy. The West End alone generated £644,719,639 for the UK economy in 2016, drawing a total attendance of 14,325,121 people. Events like these bring further benefit to local economies, with £4 being spent in the wider West End economy for every £1 spent on tickets. At the same time, British film experienced its best year for inward investment in 2016, with more film makers looking to make their films in the UK. Recent policy developments leave no scope for these sectors to continue growing, and this will be a net detriment to one of the most consistently growing industries in the UK economy and one which is only increasing in importance. This is directly contrary to Government rhetoric supporting the creative industries. In January 2017 the Culture Secretary Karen Bradley said: *"The creative industries are and will be at the heart of this government's work on industrial strategy. It's one of the major growth areas in the country and I want to assure you that I, Greg [Clark], the prime minister and others understand just how important our industries are to the UK economy"*.

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<sup>3</sup>[https://www.ofcom.org.uk/data/assets/pdf\\_file/0024/46923/700-mhz-statement.pdf](https://www.ofcom.org.uk/data/assets/pdf_file/0024/46923/700-mhz-statement.pdf) paragraphs 7.13 and 7.17, page 47 and paragraph 7.18, page 48.

## Answers to Questions

### **Q1: Do you agree with our proposed criteria for who should be eligible for the grant scheme?**

No.

SOLT/UK Theatre believes that a funding scheme should be based on the principle set out by Pascal Lamy in his report on the future use of the UHF band: the PMSE sector should be left “no worse” off in either financial or spectrum terms by Ofcom’s decision to clear the 700 MHz band. Ofcom’s principle for eligibility: “[eligible claimants] should be PMSE equipment owners operating legally who will incur a loss attributable to Ofcom’s decision that they should lose access to the 700 MHz band in May 2020”, captures this as formulated but not in the way that it is applied.

This is because the losses attributable to Ofcom’s decision to clear the band extend far beyond solely the residual value of new equipment. The disruption caused by the necessity to replace significant quantities of audio PMSE equipment will require rental companies to use additional man hours to inventory and swap out equipment<sup>4</sup>, theatres to run additional rehearsals so that sound designers can familiarise themselves with new equipment, and a host of other additional expenses which are not covered by the currently proposed funding scheme. In some instances such as Media City the impact of clearance is doubled by the financial costs and the loss of spectrum which will badly compromise the ability to use stages and studios simultaneously. These additional costs will be significant and, if they are not compensated, will place an unfair burden on PMSE equipment owners, with devastating consequences to the sector.

In modelling the costs of clearing the band, Ofcom estimated that PMSE equipment owners would encounter additional expenses roughly equal to 5% of the value of equipment being claimed for<sup>5,6</sup>. By not compensating these costs, which Ofcom have previously recognised, Ofcom are not capturing the full extent of losses attributable to their decision to clear the band. This will leave PMSE users considerably worse off. BEIRG has learnt from a meeting at the Digital Television Group that project management costs are being included in the funding scheme for those involved in DTT infrastructure and therefore questions why PMSE is being treated differently.

It is also important to note that additional project management costs will fall on PMSE equipment operators who do not necessarily own any equipment. Theatre producers in particular expect to face a host of significant costs as a direct consequence of Ofcom’s decision to clear the 700 MHz band. SOLT has approached two West End musical producers to ascertain the extent of the costs they expect to face. This revealed that, because of the scale of the equipment changes necessary to keep a show running, each show would have to run at least one additional, full rehearsal. This would include participation of the orchestra, cast, and crew, almost certainly paid at overtime rates since the normal weekly hours would have already been consumed by performances. The producers provided indicative costs for their shows ranging from c. £9,500 to c. £13,500, according to the size of production. These users should not be denied funding if the Government is serious about protecting the creative sector.

In summary, Ofcom has fallen short in both *who* is eligible for funding under Ofcom’s proposed criteria by excluding groups like theatre producers who are affected despite not owning equipment, and *what* is eligible for funding by being overly selective in equipment terms and ignoring all incremental project management and ancillary costs.

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<sup>4</sup>We understand that BEIRG’s response to the consultation includes an annex in which BEIRG member Autograph Sound details the additional work associated with the 800 MHz clearance in 2012

<sup>5</sup>[https://www.ofcom.org.uk/data/assets/pdf\\_file/0027/71928/700\\_mhz\\_implementation.pdf](https://www.ofcom.org.uk/data/assets/pdf_file/0027/71928/700_mhz_implementation.pdf) paragraph 4.8, page 19

<sup>6</sup>[https://www.ofcom.org.uk/data/assets/pdf\\_file/0024/46923/700-mhz-statement.pdf](https://www.ofcom.org.uk/data/assets/pdf_file/0024/46923/700-mhz-statement.pdf) table A2.1, page 75

**Q2: Do you agree with our assessment of the impact clearance will have on equipment which operates exclusively below 694 MHz?**

No.

Owners of PMSE equipment in fixed locations will be adversely affected by the re-planning of DTT. For example, according to Ofcom’s indicative post-clearance spectrum map, owners of 42 MHz tuning width radio system such as Sennheiser G3 range G will be unable to use their equipment in locations such as Liverpool. This equipment operates between 566-608 MHz, covering channels 33-37. In Liverpool, you can currently safely use channels 33, 35 and 36 (each of which has four green bars on Ofcom’s spectrum planner) but not 34 and 37(which have only one green bar on Ofcom planner), allowing you to use 24 radio mics across these frequencies.

After the 700 MHz clearance, it will be impossible to use any of these channels, rendering the equipment useless:

Liverpool		
Channel	Current channel availability	Channel availability post-700 MHz clearance
37	X---	X---
36	XXXX	XX--
35	XXXX	X---
34	X---	X---
33	XXXX	XX--

SOLT/UK Theatre questions why Ofcom has currently chosen to assess eligibility for equipment operating below 694 MHz based on it being made wholly redundant. If reducing available tuning range by 50% constitutes a significant impact for equipment which straddles the two bands, the same must be true for equipment operating wholly below 694 MHz. BEIRG believes that Ofcom should adjust its criteria to reflect the fact that access to a much diminished tuning range is not good enough for PMSE equipment owners who have made significant investments with an expectation of having access to the advertised tuning range of equipment for the whole of the asset’s life.

Once the value of the equipment has been adjusted to reflect the fact it is second hand and the time taken to research and find a buyer is factored in, we anticipate that most users will be reclaiming a negligible proportion of their initial investment. These problems will be made worse where equipment serves a more specific purpose or where equipment is discontinued legacy equipment. Even in the small minority of cases where PMSE users could recoup a portion of their costs on the secondary market, the timeframe is not quick enough; equipment owners need access to capital immediately in order to purchase new equipment.

In some cases, **all** equipment should be eligible for funding regardless of tuning ranges. This is because some categories of equipment owner will be forced to purchase entirely new systems in order to adjust to the new demands of operating in a vastly reduced and a more congested spectrum environment. The theatres and studios that these companies supply cannot operate different systems and technologies side-by-side for a variety of reasons:

- Some new equipment works on a set frequency spacing grid to work as efficiently as possible which either allows for growth or requires less spectrum for a given production. However if a portion of the equipment is legacy analogue equipment because it is ineligible for funding then this efficiency is lost as the digital frequency planning has to be treated as though it is analogue, with inter-modulation products calculated accordingly.

- Integrating analogue equipment with zero latency alongside newer equipment that generally has up to 3.5ms latency is unacceptable to studio and theatre sound designers. Side-by-side operation may technically be feasible but it leads to inconsistencies in the audio system which, on large scale multi-channel radio mic installations, causes the vocal sound to become incoherent. Clearly, this would damage production quality and audience enjoyment, and in turn disrupt the revenue generated from the sector.
- For similar reasons, the more subjective aspects of audio quality are compromised by having mixed systems as the old and new will have different audio characteristics that sound different, a situation which is unacceptable to sound designers and producers.

For these reasons, the organisations which own the most equipment will be forced to purchase complete replacement systems, including equipment operating below 694 MHz. These purchases are unavoidable and therefore should be funded. If these users only get 47% funding towards equipment with 50% or more of its tuning range above 700 MHz, only a tiny proportion of their equipment replacement costs will be covered, to say nothing of additional project management costs.

Ofcom is tasked with securing the “optimal use of spectrum”. If Ofcom does not fund complete systems, where necessary, it will be failing to secure the best use of spectrum while simultaneously compromising the revenue earning potential of major end users such as the West End and television studios. In Ofcom’s 2014 statement 7.27 it states that PMSE should improve their equipment and working practises. Manufacturers and industry already produce and use some of the most flexible and efficient equipment but the industry would engage further with this approach if it was adequately funded to do so, but the current proposals will not allow that to happen.

***Q3: Do you agree with our analysis of the impact clearance will have on equipment which straddles the 700 MHz band and the spectrum below 694 MHz?***

No.

BEIRG believes that any loss of functionality represents a loss attributable to Ofcom’s decision to clear the 700 MHz band. Therefore every user affected should be entitled to receive a commensurate amount of funding as any reduction of equipment utility leaves PMSE equipment owners demonstrably worse off than they were before the clearance.

For those businesses which own the most equipment, all equipment should be eligible regardless of other considerations. These businesses will have to replace equipment below 694 MHz in order to achieve the necessary spectral efficiency to continue serving the most spectrum intensive events.

***Q4: Do you have any evidence that an alternative boundary for the tuning range of equipment should be drawn?***

Yes.

If Ofcom does pursue a boundary based on the tuning range of equipment, contrary to the principle of ensuring that the PMSE sector is not left worse off, BEIRG does not believe that the boundary should be set at 50% as currently proposed.

Ofcom based its analysis on the build ranges of equipment from the two largest equipment manufacturers by market share, concluding that the build ranges fall into two categories: (1) only a small quantity of spectrum is lost, meaning that the equipment is minimally affected and (2) over 50% of the tuning range falls within the 700 MHz band, which Ofcom have identified as being eligible for funding.

However, if PMSE is granted access to the 700 MHz guard band<sup>7</sup>, a large portion of equipment will no longer be eligible for funding.

Ofcom should exclude the guard band from their assessment of funding eligibility, especially as it is not yet known how usable that spectrum will be – Ofcom are currently also consulting on interference from mobile networks in the 700 MHz band into DTT below the guard band, which suggests that there is risk. Additionally, Ofcom could consider changing the criteria so that it is based on an absolute loss of spectrum access rather than a percentage – at the moment equipment owners who have invested in top of the range equipment with the largest tuning range are disproportionately affected by a cut-off based on a percentage as they lose access to more spectrum.

However BEIRG maintains that, in order to ensure that PMSE equipment owners are left no worse off by the clearance of the 700 MHz band, any equipment impacted, no matter how minimally, should be eligible for funding.

**Q5: Do you agree with the proposed formula to estimate the level of funding?**

No.

The UK Government's decision to base the funding scheme exclusively on residual value of equipment has resulted in an extremely restricted funding formula that fails to capture the full extent of the costs that PMSE equipment owners and end users will bear as a result of Ofcom's decision to clear the band. The formula must be amended to capture the additional costs outlined in our answer to question 1.

If funding is apportioned according to the currently proposed formula, by the time of clearance equipment owners will essentially have had to pay 153% of their expected initial investment (the cost of the original piece of equipment plus the 53% shortfall to purchase replacement equipment) for each piece of affected equipment while at the same time experiencing no uplift in terms of profit over the same period. This will create an acute difficulty for the cash flow of these businesses, leaving a hole in their budgets compared to a situation in which clearance had not taken place, a problem which is multiplied by each piece of equipment claimed for. While arguably this effect is balanced in the long term by the new equipment outlasting the expected asset life of the old equipment, it would be disastrous in the short term for PMSE businesses which are typically cash poor and, with the proposed funding formula, may not last long enough to see their cash flows return to parity when they would originally have expected to replace their equipment. At minimum PMSE enterprises will have to compromise on production values. At worst, companies will be going out of business if they can't make up the shortfall between funding provided and the replacement value of equipment or if they encounter any other difficulties in the short term which require expenditure.

Previous funding formulas have made allowances for the cost of bringing forward a capital expenditure; the formula in the 2010 statement<sup>8</sup> and the modelling of the cost of clearance in 2014<sup>9</sup> were both based on different principles which attempted to correct for the economic burden of bringing forward payment. BEIRG understands that the 2010 formula was based on security of tenure and is grateful that Government did not base the scheme on such a principle this time as it would have led to market failure. However, since Ofcom has chosen to use an average asset age and life expectancy, the scheme could still be based on when owners could reasonably have expected to replace their equipment. With an average asset age at the time of clearance of 8.5 years<sup>10</sup> and an average asset life of 15 years, PMSE

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<sup>7</sup>[https://www.ofcom.org.uk/consultations-and-statements/category-1/700-mhz-guard-band-pmse?utm\\_source=update&utm\\_medium=email&utm\\_campaign=pmse700mhz](https://www.ofcom.org.uk/consultations-and-statements/category-1/700-mhz-guard-band-pmse?utm_source=update&utm_medium=email&utm_campaign=pmse700mhz)

<sup>8</sup>[https://www.ofcom.org.uk/\\_data/assets/pdf\\_file/0021/46551/statement.pdf](https://www.ofcom.org.uk/_data/assets/pdf_file/0021/46551/statement.pdf) pages 74-77

<sup>9</sup>[https://www.ofcom.org.uk/\\_data/assets/pdf\\_file/0025/28492/consultation-future-use-700MHz-band.pdf](https://www.ofcom.org.uk/_data/assets/pdf_file/0025/28492/consultation-future-use-700MHz-band.pdf) paragraphs A14.3 to A14.5, page 175

<sup>10</sup> Average age will be 8.5 years at the time of clearance but not when equipment owners will be replacing equipment. See our answer to question 10.



equipment owners would reasonably expect to replace their equipment at the end of 2026, resulting in a funding period of 6.5 years. Applying either the 2010 funding formula or the 2014 modelling formula on this principle would result in a more positive outcome for PMSE users. SOLT/UKT believes it would be fair to take this view because the asset life of equipment has always extended beyond the security of tenure of 2021. PMSE equipment owners never had the option of buying cheaper equipment with a shorter asset life because it does not exist. PMSE users could therefore never reasonably be expected to base their purchasing decisions on such a short security of tenure and can only have expected to receive full economic value of their equipment over the course of its expected life.

Ofcom should recommend that Government reviews its decision that funding is based solely on residual value of equipment. The additional costs outlined in our answer to question 1 must be included to reflect the reality of the cost burden that will be placed on PMSE businesses.

**Q6: Do you agree with our approach to calculating asset life?**

SOLT/UK Theatre has no comments on Ofcom's approach to calculating asset life.

**Q7: Are you aware of any developments which would mean data from the 2013 equipment survey or the 2010 Channel 69 statement are likely to misrepresent average asset life?**

No we are not aware of any developments.

**Q8: Do you agree with the use of an average asset age for the estimation of funding entitlements? If not, do you have any suggestions for an alternative approach?**

If the scheme is based narrowly on residual value of equipment, the heavy reliance on averages is a problem. SOLT/UK Theatre appreciates that it is necessary to use averages in the absence of any other reliable method of collecting data. However, as Ofcom acknowledges, there will be some instances where PMSE users do not receive as much funding as they would have if Ofcom had undertaken a case-by-case assessment. While from an economic perspective this may balance out across the industry as a whole (which SOLT/UK Theatre disputes since the proposed funding formula only covers a proportion of the costs equipment owners will face), it will not always be the case across individual users' inventories. SOLT/ UK Theatre, along with BEIRG, does not believe that some equipment owners doing slightly better on average balances out other companies going out of business.

**Q9: Are we correct in our assumption that a large proportion of PMSE equipment owners will not have evidence of when they purchased their equipment?**

Yes.

**Q10: Do the data in the 2013 equipment survey provide a reasonable basis for calculating average equipment age? If not, do you have an alternative approach for gathering relevant data for making this calculation?**

Ofcom have calculated the average asset age in mid-2020, the time by which the 700 MHz band must have been cleared. In reality PMSE users will begin replacing their equipment some 18 months before clearance to allow for refitting of large venues and the additional work required for rehearsals and testing. They will therefore be ceasing to gain economic value from their equipment in mid-2018. The average age of equipment should be adjusted to reflect this.

Ofcom have made the assumption that PMSE users “have not materially expanded their stocks of equipment since 2013”. This does not match our experience<sup>11</sup>. This means that the average age of equipment is slightly younger than Ofcom have estimated.

***Q11: Do you have any comments on our proposals for how the claims handling process should operate?***

In designing the claims handling process, Ofcom needs to consider in detail how PMSE users operate. For some operators, much of the equipment being claimed for will still be in use up until the time it is replaced. Ofcom must therefore build as much flexibility into the claims handling process as possible in order to allow PMSE users to claim for their equipment at a time that does not negatively impact their businesses or the smooth running of theatres and studios. This may mean extending the period during which PMSE equipment owners can process their claims.

By the same token, processing claims should be as quick as possible to minimise the time that PMSE users are without equipment or funding. We note that users will currently be expected to surrender their equipment. In some cases, such as touring productions, there will not be a convenient break in their schedule which allows them to surrender equipment. These users will need finance up front to cover the cost of new equipment, which may mean seeking finance from alternate sources, incurring interest charges which Ofcom should fund.

An alternative to this approach would be that PMSE users do not have to surrender their equipment. This would mean PMSE users being funded for the lost utility of equipment, but still allowing them to maximise the remaining utility, such as by allowing them to use equipment in the 700 MHz band up until the introduction of mobile services, making the transition between old and new equipment smoother. This would have the additional benefit in saving Government money by removing the need to collect, store, and dispose of prematurely retired equipment.

SOLT/UK Theatre recognises that Ofcom have required the surrender of equipment in the past to avoid the possibility of fraud. We urge Ofcom to investigate ways to avoid this issues, for instance through indelibly marking equipment.

Ofcom should also ensure that the funding scheme is well publicised and user-friendly. Many claimants will be SMEs and freelancers, and it is important that the scheme is easy to navigate considering the limited resources at their disposal.

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<sup>11</sup> We understand that Autograph Sound has confidentially supplied Ofcom with an inventory of equipment purchased since 2013 in annex 2 to BEIRG’s response to the consultation.