



**SKY'S RESPONSE TO
OFCOM'S CONSULTATION ON PMSE CLEARING THE 700 MHZ BAND
SUPPORT FOR PMSE EQUIPMENT OWNERS**

1. Introduction

- 1.1 Sky welcomes the opportunity to comment on Ofcom's consultation Support for PMSE equipment owners ("The Consultation"). Sky is an extensive user of PMSE equipment in the creation of our original programming – content which makes an important contribution to the fulfilment of a number of Ofcom's duties, including ensuring the availability of a wide range of television services which are of high quality and appeal to a variety of tastes and interests, and to media plurality.
- 1.2 The reduction in available spectrum as a result of the clearance of the 700 MHz band will constitute a significant change for PMSE users over a relatively short time period. Moreover, this upheaval comes less than five years after the completion of digital switchover, a process which also necessitated large-scale equipment replacements.
- 1.3 Sky is broadly supportive of Ofcom's decision to make the 700 MHz band available for mobile use. Such a change is likely to result in a more efficient use of spectrum, and will help meet growing demand for mobile data.
- 1.4 However, the consequences of the clearance for PMSE users will have to be closely and carefully managed. Sky has expressed concern on a number of previous occasions to senior Ofcom officials about the lack of any clear roadmap which will enable PMSE operations to be maintained in future.
- 1.5 While The Consultation's proposal for financial support is welcome, Ofcom must urgently deliver on a comprehensive programme of work to manage and fully fund the transition of PMSE users into the remaining UHF spectrum and into new bands.
- 1.6 In the course of our response to The Consultation, we will also address certain questions in two other Ofcom consultations: Proposed use of the 694 to 703 band [Spectrum for audio PMSE] and Coexistence of new services in the 700 MHz band with digital terrestrial television.

2. Clearing the 700 MHz band will have a significant impact on PMSE users – particularly busy studio complexes such as Sky's

- 2.1 As The Consultation acknowledges, making the 700 MHz band available for mobile use will significantly reduce the spectrum available for certain PMSE uses. The available spectrum for wireless microphones, IEMs and stage intercoms will be reduced by around 30% at the very least. Depending on finalised DTT network plans, which are regrettably still not available at the time of this response, some locations may experience an even greater loss of access.
- 2.2 Ofcom's criteria for eligibility are based on identifying legitimate, active users of PMSE equipment, and as such seem reasonable to Sky. However, the analysis does not take full account of the impact of this change on the most intensive users of PMSE equipment. In a

response to a previous consultation we pointed out that Ofcom's analysis fails to consider the impact of reduced spectrum availability for the example of a busy TV studio complex such as the one Sky operates in Osterley.

2.3 Sky Studios currently utilises 26 UHF channels for PMSE audio equipment out of the 40 channels allocated in the 470-790 MHz frequencies. Clearance of the 700 MHz band will result in at least 13 UHF channels no longer being available for use, reducing the total available channels that current equipment can work in to 27. With DTT broadcasting in some of these channels and additional protection requirements, it is likely that fewer than 19 channels will remain available for PMSE use.

3. Ofcom's proposals for compensation fail to properly compensate the most intensive equipment users. Several examples of these failures are provided in the following clauses.

3.1 Ofcom's proposals deem equipment working in spectrum below 694 MHz as being ineligible for compensation. However, in some cases such equipment may be part of larger, integrated systems which are so substantially affected by clearance of the 700 MHz band that the whole system and its component parts may become unviable.

3.2 Ofcom's proposals assume that equipment that can tune to 50% of its range retains value whereas intensive users may not be able to utilise all of this equipment where the remaining spectrum will not accommodate all of it. This limitation of use will be exacerbated wherever local DTT occupies some of the spectrum that the equipment is capable of using.

3.3 Ofcom's proposals do not address a) the significant costs of re-planning PMSE frequency use, b) changes to interfaces with production equipment which may be necessary to accommodate newly procured, replacement equipment, c) PMSE users being forced to acquire more expensive digital equipment, and d) implementation costs such as project management, installation, testing and qualification.

3.4 Ofcom's decision on the future use of the 694 – 703 MHz band, which is also being consulted on concurrently to The Consultation, may have a bearing on the plans PMSE users make and the level of compensation applicable to some PMSE equipment. Sky welcomes proposals for securing new or existing spectrum for PMSE users, but due to the uncertain value of this spectrum band to PMSE users (as acknowledged by Ofcom in The Consultation) we believe that Ofcom should assume that it does not exist when dealing with compensation arrangements.

4. Ofcom's proposed timetable of actions does not provide for compensation when it is needed nor deal adequately with the wider issue of a spectrum shortage created by 700 MHz clearance

4.1 The costs of replacing existing PMSE equipment will be material. These are significant, unbudgeted costs to content producers which will remain unknown until the post 700 MHz clearance DTT frequency plan is made available because re-planning of PMSE frequencies cannot begin until full details of the remaining spectrum are known. Ofcom should ensure that the DTT frequency plan is made available to all PMSE equipment users as soon as practically possible.

4.2 At present, there is no audio PMSE equipment available which has the ability to operate in the new higher frequency spectrum 960-1164 MHz recently authorised by Ofcom for PMSE use. Sky has significant concerns about the feasibility of the process of bringing 960 – 1164 MHz into use. We agree that at a high level the bands that Ofcom have identified are appropriate and could serve to mitigate the loss of the 700 MHz bands. But without

certainty on costs, buy-in from the manufacturers, or timely European approval and harmonisation, a large-scale change programme appears challenging to deliver by the time the clearance programme commences. This puts current approaches to programme making in jeopardy. It is imperative that Ofcom's activities in support of making this new band viable for manufacturers and PMSE equipment users are carried out with best endeavours. These activities include, but are not limited to, the pursuit of European harmonisation. Ofcom should adequately resource its efforts to ensure it is pro-active in its engagement with industry and other stakeholders alike. In managing this transition, it will be vital that Ofcom and Government maintain an ongoing dialogue with PMSE users.

- 4.3 In deciding to clear the 800 MHz band, Ofcom committed to provide funding for the move of PMSE users from channel 69, stating that "*these commitments to minimising disruption [are] crucial to making it possible for PMSE users to continue providing important services*"¹. Sky observes no particular difference in the circumstances between the clearance of the 800 MHz band and the future 700 MHz programme, and therefore considers that funding arrangements should be made available in a much more timely and positive manner. Under the proposals in The Consultation it is envisaged that the grant scheme applications will open in mid 2019 whereas the DTT network changes are due to begin in 2017 and affect the London area in 2018.
- 4.4 Sky notes that the programme to modify the UK's DTT network for operation in the spectrum remaining after 700 MHz clearance a) is fully funded, b) is being closely managed by DCMS and Ofcom, and c) has gone through several iterations to ensure its successful and timely delivery. The cost of the DTT network programme runs into hundreds of millions of pounds. By comparison, the full cost of converting PMSE equipment for a post 700 MHz clearance landscape will be a fraction of that committed to the DTT programme. Given the high degree of dependence of DTT and other UK television networks on content created using wireless PMSE applications, DCMS and Ofcom should re-think their piecemeal approach to compensating PMSE equipment users to acknowledge the importance of minimising the operational and economic disruption of 700 MHz clearance. The approach should be consistent with the full compensation programme adopted for the DTT network. Indeed Sky can see no justification for adopting a different approach.

5. Ofcom should also incentivise the DTT platform to seek greater spectrum efficiency

- 5.1 Ofcom has a duty to promote the efficient management of radio spectrum. Sky considers that an appropriate policy objective would, in this context, be to explore and incentivise methods of reducing the amount of spectrum that the DTT platform currently uses as part of the wider 700 MHz programme.
- 5.2 For example, efficiencies could be delivered through technological developments, be that a wider adoption of the existing transmission standard of DVB-T2/MPEG 4, or new video compression standards such as HEVC. Similarly, more innovative approaches to network planning such as Single Frequency Networks could be explored as another way of increasing the amount of spectrum available for other purposes.
- 5.3 Sky would support any industry moves to adopt new technological standards. But there are limited incentives for multiplex operators to seek greater efficiencies, so Ofcom's involvement may be necessary to keep the UK competitive internationally. In particular, Ofcom's current policy of setting prices for DTT spectrum only on the basis of cost recovery

¹ Paragraph 2.3, "Clearing the 800 MHz band", Ofcom, August 2010.

patently does nothing to incentivise multiplex operators to adopt more efficient technology standards.

5.4 Any measures which deliver a more efficient DTT platform would go some way to alleviating the impact on PMSE. With a 30% reduction of available channels proposed as part of this move, any additional spectrum in these bands would have significant incremental benefits.

5.5 Ofcom is also consulting, concurrently to The Consultation, on Coexistence of new services in the 700 MHz band with digital terrestrial television. Sky welcomes the more pragmatic approach adopted by Ofcom in its analysis and the acknowledgement that the performance of TV receivers in terms of immunity to interference is improving. Sky believes that a similarly pragmatic approach should be adopted for analysis that Ofcom decides to undertake in future into interference between applications in adjacent or sharing spectrum scenarios.

6. Specific answers to consultation questions

6.1 PMSE clearing the 700 MHz band - Support for PMSE equipment owners

Question 1: Do you agree with our proposed criteria for who should be eligible for the grant scheme?

Yes

Question 2: Do you agree with our assessment of the impact clearance will have on equipment which operates exclusively below 694 MHz? No, our response sets out knock-on effects to associated equipment which will add substantially to the costs many equipment users will have to bear under the proposals.

Question 3: 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, it will not be possible to re-use all partially affected equipment as Ofcom envisages.

Question 4: Do you have any evidence that an alternative boundary for the tuning range of equipment should be drawn? Yes, but it will depend on the specific spectrum available post the clearance (not currently available to Sky) and the equipment mix held by users.

Question 5: Do you agree with the proposed formula to estimate the level of funding? No, the costs will be much greater for reasons stated in our response.

Question 6: Do you agree with our approach to calculating asset life? Broadly yes.

Question 7: 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.

Question 8: 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? No, we believe full compensation should be made available for PMSE equipment users in the same way that DTT network reconfiguration is being supported.

Question 9: Are we correct in our assumption that a large proportion of PMSE equipment owners will not have evidence of when they purchased their equipment? Probably yes, especially for older equipment.

Question 10: 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? Broadly yes.

Question 11: Do you have any comments on our proposals for how the claims handling process should operate? *As we state in our response, under the proposals, significant expenditure will be needed by PMSE equipment users well before the claims handling process begins and the compensation will leave many PMSE equipment owners substantially out of pocket.*

6.2 Coexistence of new services in the 700 MHz band with digital terrestrial television

Question 1: Do you agree with our conclusions that a) the risk of interference from mobile handsets to DTT will be minimal and b) the risk of interference from mobile base stations in 700 MHz to DTT will be broadly similar to the risk for 800 MHz, with some tens of thousands of households potentially affected? *Yes, we support Ofcom's pragmatic approach and believe similar approaches should be adopted in future for spectrum use analysis in adjacent and sharing applications.*

Question 2: Do you have any comments on our analysis of coexistence risks related to set-top aerials, direct signal ingress to receivers, impact of DTT on mobile services and interference to cable TV? *We are broadly supportive of the approach although believe set-top aerials and cable TV should be out of scope.*

Question 3: Do you agree with our conclusions that DTT receiver filters will be the most effective mitigation technique for the 700 MHz band and that group K aerials will also help to mitigate against 700 MHz coexistence issues? *Yes.*

6.3 Spectrum for audio PMSE - Proposed use of the 694 to 703 MHz band

Question 1: Do you have any comments on our proposal to allow audio PMSE services to operate in the guard band from 694 to 703 MHz, and that this would be a benefit to PMSE users? *As per our response, Sky is supportive of this, subject to it not being taken account of in the support scheme. We also believe that the DTT broadcast community should be strongly encouraged to use the remaining UHF spectrum more efficiently.*

Sky

6th July 2017

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