

## **Additional comments:**

### About Intellect

Intellect is the UK trade association for the technology industry. Our members account for over 80% of these markets ranging from blue-chip multinationals to early stage technology companies. These industries together generate around 10% of UK GDP and 15% of UK trade. For more information about Intellect go to:  
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### Introduction

Intellect's membership includes companies that will supply the broadcasters, mobile broadband and cellular operators as well as the companies that will be heavily involved in the deployment of these services.

Intellect has consulted widely amongst its membership in producing this response text, and a significant number of our members have provided specific inputs to it. Intellect considers that this Ofcom consultation is timely, and given that digital switchover is under way, serious consideration should be given to the resultant use of the broadcast spectrum.

### **Question 1: Do you agree that clearing DTT from channels 61 and 62 and PMSE from channel 69 to align the upper band of cleared spectrum in the UK with the emerging digital dividend in other European countries is likely to further the interests of citizens and consumers to the greatest extent?:**

Intellect supports the moves by Ofcom to allow possible access to similar spectrum in Europe. We agree that the economic benefits of enabling mobile broadband are substantial.

We note however that this may be an opportune time to launch an investigation of the actual spectrum needs of the PMSE microphone services and provide access sufficient to match that, thus effectively opening the possibility of clearing the remaining channels for other services.

### **Question 2: Do you agree that the proposed DTT migration criteria are proportionate and appropriate? If not, please explain why and clearly identify any other criteria you believe should be adopted and why.:**

Yes with the provisos given in our answer to question 1. We support the proposed hybrid solution as it minimises coverage losses and household aerial changeouts but is a more risky solution as it is more complex to implement.

### **Question 3: Do you have views on the options identified and our assessment of them? Do you believe there are other, superior options, and, if so, why? Do you agree that the hybrid option is most consistent with the DTT migration criteria?:**

We support the hybrid changeout solution but are concerned there is no mention of the need for an awareness campaign to ensure viewers are given sufficient information about the need to retune their TV sets. We are also concerned that possibly as many as 100,000 households may need new TV aerials under this plan.

**Question 4: Do you have views on the implementation-timing options identified and our assessment of them? Do you agree that DSO-integrated implementation is most consistent with the DTT migration criteria? If not, why not?:**

We agree the DSO integrated implementation solution is the best option in the circumstances. We are concerned however that this solution may result in the spectrum not being available in its entirety until 2013 and that the new plans for channels 61 and 62 should be started as soon as possible.

We also note that clearing the 800MHz band does not preclude its use for Broadcast services although the need to coordinate with European services may mean that power levels are severely reduced.

**Question 5: Do you agree that a programme-control and -governance arrangement such as that outlined above is appropriate?:**

Yes we do, also that effective project management is vital on this project if the completion dates are not to go beyond 2013.

**Question 6: Do you agree that the four cost categories adequately capture the costs associated with clearing DTT from channels 61 and 62? Are there any costs that do not appear to have been accounted for in any of these categories?:**

We agree that the cost categories appear to cover the areas where costs will be incurred, but we are concerned that the £100M difference between the low and high values needs urgent investigation with more accurate figures based on robust evidence to be published before the start of the auctions. These figures are important if bidders are expected to underwrite these costs in some way.

**Question 7: Do you agree that our cost profile is a reasonable basis for planning the capital expenditure for clearing DTT from channels 61 and 62?:**

We accept the cost profiling appears reasonable but we again state that these figures must be backed up by firm evidential costs.

**Question 8: Do you agree that these are the most appropriate criteria to assess which spectrum is the best alternative to channel 69 for PMSE?:**

Not qualified to comment but the methodology appears sound.

**Question 9: Do you agree with our technical and coverage analysis of the possible alternatives to channel 69 for PMSE?:**

Appears to be sound.

**Question 10: Do you agree with our economic assessment of the realistic alternatives to channel 69 for PMSE?:**

We note that much of the interleaved spectrum is already available to PMSE and hence if ch.69 PMSE requirements could be accommodated within that spectrum there would be no additional opportunity costs. Similarly if the availability of ch. 38 would reduce the amount of interleaved spectrum that is needed then there may be an opportunity for further adjustments to the PMSE arrangements (i.e. consolidation of PMSE into fewer channels).

We are however unclear as to how the total PMSE requirements have been determined.

**Question 11: Do you agree that channel 38 is the best alternative to channel 69 for PMSE?:**

Yes, if a dedicated channel is needed.

**Question 12: Do you agree that we should award channel 38 to the band manager on the same terms as would have applied to channel 69?:**

No comment.

**Question 13: Do you agree with our proposal to maintain PMSE access to channel 36 on 12 months? notice to cease and to the rest of the cleared spectrum (channels 31-35, 37 and 61-69) until DSO is completed in the UK in late 2012?:**

No. We think that if the awarded spectrum is cleared of TV use the the option to deploy new services should be available immediately (recognising that it could be sublet on commercial terms if not required).

**Question 14: Do you agree with our approach to determining eligibility for, and our assessment of the level of, funding to move PMSE from channel 69?:**

Again as per our comments in Q6 there must be more accuracy in the costs a potential bidder will incur for the transition.

**Question 15: Do you agree that three years is long enough for PMSE to move from channel 69?:**

No comment.

**Question 16: Do you agree that with our analysis of the key impacts of our policy options? Are there any other key impacts we should assess?:**

Yes to the first of these two questions.

We consider this to be an ideal time to investigate the actual needs of the PMSE community in the UHF bands with a view to providing access to sufficient spectrum to meet their needs and thus leaving the remainder open for new services (in such a manner as to avoid interference to digital TV in the future).

We note that the PMSE usage in this band consists currently of microphones with an occupied bandwidth of 200kHz which provides the scope of up to 40 concurrent (but independent) communications paths per TV channel. (N.B. the latter observation is made in the full knowledge that the equipment deployed would have to be provided with sufficient filtering to achieve this level of utilisation). 40 is a very significant number considering the very short range these devices are required to operate over and would indicate a very high number of devices should be possible to deploy in a very small number of TV channels.

It is not clear how Ofcom has calculated the extra cost of using unharmonised spectrum. The document appears to imply that equipment costs would be higher. In reality it is more likely that standard terminals would be used, implying service would be restricted in the areas where channel 61/62 are used (assuming interference to PMSE in Ch 69 can be avoided.) This would reduce the spectrum value.

With all four options it is also necessary to consider the possibility of terminals transmitting in an FDD downlink band, they can interfere if in close proximity to RX terminal. CEPT-SE42 do not recommend such deployment, but the Ofcom policy does not barr it. . Interference will also impact consumer benefits. In the same way that clearing Ch 61, 62 and 69 increases economic benefit, so also would harmonising the transmit/receive bands This does not alter the technology neutrality (since HUPA, LTE and Wimax could all be used.).

Lastly, and as a footnote, we should mention that we consider that a further significant benefit of enabling an 800MHz mobile band (additional to the reduced energy costs) is a reduction in carbon emissions resulting from far fewer base stations being needed.