

*Championing
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in broadcasting*

Founded in 1983 by Jocelyn Hay CBE



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**RESPONSE OF THE VOICE OF THE LISTENER AND VIEWER
TO OFCOM'S CONSULTATION ON MANAGING THE EFFECTS OF
700 MHZ CLEARANCE ON PMSE AND DTT VIEWERS**

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Voice of the Listener & Viewer a charitable company limited by guarantee registered in England No. 4407712
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INFORMATION ABOUT THE VLV

Voice of the Listener & Viewer Limited (VLV) represents the citizen and consumer interests in broadcasting and speaks for listeners and viewers on the full range of broadcasting issues. It uses its independent expertise to champion quality and diversity in public service broadcasting, to respond to consultations, to produce policy briefings and to conduct research. VLV has no political, commercial or sectarian affiliations and is concerned with the issues, structures, institutions and regulations that underpin the British broadcasting system. VLV supports the principles of public service in broadcasting. It is a charitable company limited by guarantee (registered in England No 4407712 - Charity No 1152136).

EXECUTIVE SUMMARY

- 1.1 VLV is committed to the preservation of Public Service Broadcasting (PSB) and strives to protect its place in the communications market. We value, in particular, its free availability to viewers and listeners through the medium of Digital Terrestrial Television (DTT) which depends upon adequate amounts of electromagnetic spectrum that are crucial to its future evolution. **We are concerned at the continued erosion of DTT spectrum resources and the clear threat to free-to-air television that this latest clearance imposes.**
- 1.2 The a significant number of UK viewers currently make use of the 700MHz spectrum to receive their free-to-air television.
- 1.3 Stakeholders in PSB include viewers who hitherto have had little direct say in the recent changes to broadcasting infrastructure which has led to additional costs and disruption for viewers. VLV expects that there will be further cost and disruption for viewers as a result of the proposed 700 MHz band clearance and beyond. VLV requires that such costs should be soundly justified and that they should be minimised.
- 1.4 **We expect that no costs whatsoever of migration out of the 700 MHz band should be borne by viewers.** This migration is being forced upon them and they have had little or no say in its planning. The beneficiaries of the migration are the Mobile Network Operators (MNOs) and they should ultimately fund all costs including infrastructure changes and any disruption to broadcasters' networks. We were not convinced by the cost and benefit analysis (CBA) in favour of clearance reported in a previous Ofcom consultation; we note that the CBA was a purely monetary evaluation which took into account no consideration of the contribution PSB makes to the UK's social cohesion and culture.

- 1.5 It is to be expected that during the engineering work there will be some disruption to services; these should be minimised. Furthermore it would be of great value to viewers to be kept fully informed of work in their respective regions so that confusion is minimised especially for older viewers and viewers with special needs.
- 1.6 **It is also imperative that there is a pro-active, visible and responsible body to oversee the project. This body must be known to viewers and readily available to them; it must be empowered, adequately resourced and required to resolve issues as they arise.**
- 1.7 VLV has concerns about the ability of the spectrum below 700 MHz to absorb all current services completely with no loss of quality of service and coverage and no erosion of technical standards. We also note that this reduced spectrum will be subject to further pressure from the MNOs in the foreseeable future thus placing further pressure on it. **This clearance is not the end of the potential disruption to PSB and its viewers.**
- 1.8 We note that the consultation document asserts with confidence that current DTT content can be accommodated in the reduced spectrum below the 700 MHz band. We are led to understand that this is possible without the additional deployment of new technologies such as DVB-T2 and MPEG-4 which could mean any viewers who renewed their receivers before or at DSO in 2012 would have to buy new TV receivers. We further understand that this accommodation is only made possible by the removal or displacement of the two Interim Multiplexes (IMs) that operate under restricted licences. We would expect a clear statement to this effect when frequency planning for clearance is finalised.
- 1.9 **We note the need for a large number of viewers to re-tune their receivers and for some to change aerials and/or redirect them.** We also note the findings of the Manchester aerial survey and the consequential suggestion that the number of viewers affected may be limited to about 160,000 or 110,000 if only an aerial re-point is necessary. It is difficult for external bodies or individuals to verify these statistics. We note that the need to change aerials may be concentrated in specific areas.
- 1.10 We note that this consultation is purely about the clearance process and its direct consequences. Post clearance, the vacant spectrum will be licensed for Mobile Data Services (MDS) which may, soon after - and like the 800 MHz clearance and introduction of 4G - be a potential source of interference to a re-planned DTT. This will lead to further disruption for viewers and a further need to address the consequences of this clearance in due course. We expect full consultation on the processes required to mitigate such interference and that, during the clearance stage, advice to viewers will anticipate the possible need for mitigation at a later date. Clearance and later mitigation should be viewed as part of the same project.
- 1.11 We have no direct involvement in the effects of migration on PMSE but nevertheless have sympathy for those organisations that will have to replace equipment. **PMSE is essential to the effective functioning of the UK creative community which**

contributes considerably to the economy. We would support any claim by PMSE users that all costs are borne by the mobile data companies since they are the beneficiaries of the changes in spectrum use.

GENERAL COMMENTS

- 2.1 The VLV welcomes the opportunity to respond to the consultation on Managing the effects of 700 MHz clearance on PMSE and DTT viewers. We have responded in the past to consultations on the altered use of the UHF spectrum formerly allocated to analogue TV services and more recently DTT, in particular the reallocation of 800 MHz band which is now being exploited for MDS.
- 2.2 The measures that were deemed necessary for that clearance and the protection of the public from the consequences of MDS are equally necessary in this case. The experience of the 800 MHz clearance will be valuable in assessing the impact upon viewers consequent upon clearance of the 700 MHz band.
- 2.3 In particular we re-iterate our view that no cost of any migration caused by the reclamation of the 700 MHz spectrum should fall upon DTT viewers. Furthermore we require that the public are given full and effective advice on the impending changes in particular in those regions where it is expected that interference effects will be likely. The consultation document identifies those areas with their respective risk levels.
- 2.4 The accompanying report on the effectiveness of domestic aerial systems in the Manchester area is valuable information to support the planning process for the vital project of informing the public about the consequences for them of the migration of DTT services.
- 2.5 We note that this consultation is purely about the clearance process and its direct consequences. As a consequence of this clearance the repositioned DTT services will be concentrated in the lower reaches of the UHF spectrum, below the 700 MHz band. As in the case of the migration of television services out of the 800 MHz band, designed to provide resources for the new mobile 4G services, this is likely to cause interference for some viewers. Introducing new MDS will lead to a further disruption for DTT viewers. We expect full consultation on the processes required to mitigate such interference.
- 2.6 In preparing a Help Scheme to support viewers through the clearance stage Ofcom should assume that scheme will not be confined to clearance alone, but should continue throughout the period required to complete installation and operation of new 4/5G or similar MDS. It follows then that even during the early clearance stage advice to viewers should identify the possible need for mitigation of 4/5G interference since this may follow within a short period of time.

- 2.7 We do not wish to see a situation where viewers, albeit in small numbers, have to obtain new aerials as a consequence of clearance only then to find soon afterwards that they are in a 4/5G interference trap with potentially expensive mitigation costs. It is, of course, not possible at this stage for Mobile Network Operators (MNOs) to know precisely where their new base stations will be located. Nevertheless they do know now that the 700 MHz spectrum will be theirs and so planning, including base station location, should already be in process and it seems reasonable to assume that some, at least, will be on the same sites as the current ones. The planning and provision of new MDS should not cause new and surprising problems to viewers.

SECTION 1: INTRODUCTION

- 3.1 We welcome the clear statement of intent in this section and also the recognition of the consequences of the proposed changes in UHF spectrum use for both DTT and PMSE. We welcome in particular clause 1.5 for its proposed protection for DTT users.
- 3.2 We note that the assessment of the impact on DTT viewers estimates that the effect will be small and limited to less than “1% of viewers”; this would suggest about 270,000 households (1% of 27million) or, if referred to the UK population of 60 million, about 600,000 people. However, Clause 3.7 states that up to **14 million households** may require a receiver re-tune which is about 50% of all homes. We consider that the need for a re-tune itself constitutes an adverse effect and that such households should be defined as “affected” and not excluded from this category. Thus, in our view, the claim that only 1% is affected is inaccurate. Some clarification of terms is required so that the potential scale of the problem is not hidden.

SECTION 2: PROGRESS TO DATE ON CLEARANCE

- 4.1 We welcome the summary in Section 2 of the current position regarding clearance of the 700 MHz band. We welcome the steps reported in clause 2.3, especially the engagement with both viewer and mobile industries to contribute towards minimising disruption and cost to DTT viewers and PMSE users.
- 4.2 We note clauses 2.4 to 2.9 and their technical content describing the various DTT services available and how they are carried within multiplexes. We note that the process of re-allocating frequencies is not yet complete (clause 2.7). This is of some concern because it implies that the decision to clear the band was taken without any certainty that current DTT services could all be accommodated in the remaining spectrum without loss of coverage, content or disruption to viewers.
- 4.3 We welcome especially the intent (clause 2.5) to protect in full the coverage of the PSB services. VLV regards this as an imperative pre-condition of any clearance project and we are somewhat concerned at the careful use of the words “near universal” and “broadly matching”. This implies some doubt that the current coverage may not be achievable so some further clarification of this point is required.

- 4.4 We are led to understand that it is possible to maintain the coverage of current PSB services without the additional deployment of new technologies such as DVB-T2 and MPEG-4 which would mean any viewers who renewed their receivers before or at DSO in 2012 may need to buy new TV sets. We further understand that this accommodation is only made possible by the removal or displacement of the two Interim Multiplexes (IMs) that operate under restricted licences. We would expect a clear confirmation of the frequency planning for clearance when this removal is finalised. VLV intends to monitor these developments very closely and will press firmly for the maintenance of the reach, quality and completeness of all current DTT services.
- 4.5 We note the steps taken to protect PMSE in clauses 2.10 to 2.12. The fact that PMSE use was considerable in the 700 MHz band has required allocation of further spectrum around 1GHz. This, however, is shared with other services although it is assumed in the consultation document that adequate and proven protection for both user groups is available as a result of this proposal.
- 4.6 We note the circumstances regarding international agreement on the use of the 700 MHz band for MDS. We are aware of the recent discussions about the re-purposing of this band and have made contributions to local UK consultations and to other European bodies. Whilst regretting the loss of the 700 MHz band to DTT which is now a *fait accompli* we understand the international harmonisation argument but doubt the growth projections claimed by MNOs.

SECTION 3: DTT VIEWER SUPPORT

- 5.1 VLV welcomes this section of the consultation report, in particular for its concentration on the impact of spectrum changes on DTT viewers. We believe this recognition to be vital in clarifying the conditions necessary for good outcomes for viewers.
- 5.2 We note the reminder about steps taken during the DSO process. We would agree that the 700 MHz clearance is best compared with the 800 MHz clearance which is now completed.
- 5.3 Table 1 in clause 3.5 usefully summarises the various situations faced by viewers. We note from clause 3.9 that, according to surveys, 80% of viewers are confident about performing a re-tune themselves. That still leaves 20% of viewers who are not confident. This is not a trivial number of people and suggests the need for a significant support system.

TECHNICAL MATTERS

- 5.4 We note the estimate that up to 14 million households (a little over 50% of the total number of UK homes) may need to re-tune their receivers. This is not a trivial number but we acknowledge that since re-tuning is now more or less a routine process for

most viewers, there is no reason to suppose that the majority of viewers cannot deal with it for the purposes of the 700 MHz clearance. It is probable that frequency changes will not be limited to those living in areas where significant shifts in frequencies are required. Adjustments may be needed in the bands below 700 MHz to make room for new transmissions so the large number affected in this case should be no surprise.

- 5.5 Occasional changes in multiplex contents do not usually have a major impact or immediate need for re-tuning when only one or two services within a multiplex are changed. Wholesale shifts of multiplexes have a much greater effect, possibly leading to blank screens as a result of the loss of those multiplexes. This greater level of impact needs to be anticipated more carefully and so localised tests prior to clearance are important if viewer difficulties are to be accurately assessed.

Question 1: Do you agree with our assessment of the number of viewers that will need to retune?

- 5.6 Individual viewers and organisations such as the VLV do not have the resources to verify independently any estimates provided in this consultation. However, we accept that they are provided in good faith and have been supplied via reliable sources and based on previous experience.

Question 2: Do you have any comments on how viewers will find the re-tuning process and whether there are particular groups of viewers which will require greater consideration/assistance with the process? What help might they need?

- 5.7 We note the results of surveys provided in the consultation documents. We do not believe that re-tuning will tax any but the most vulnerable who may well already have support because they live in residential care homes or, even if living alone, have access to support in order to deal with past and current re-tuning. Nevertheless that small number of the most vulnerable should not be forgotten and perhaps the DWP, nationally or locally, may be able to identify and assist these people.
- 5.8 We note the estimated need for some households to replace (100,000 to 160,000, i.e. $130,000 \pm 30,000$ or 23%) or re-point (40,000 to 110,000, i.e. $75,000 \pm 35,000$ or 47%) their aerials; these groups are assumed to be mutually exclusive. We welcome the map of Figure 1 and note that the DTT frequencies in the 700 MHz band are used in the specific areas identified in the map. Theoretically some areas will not be affected directly but there may be adjustments needed everywhere in order to find the space needed for the displaced transmissions. The consultation does not provide sufficient discrimination in respect of the impact of such adjustments from that in directly affected areas where the concentration of affected viewers is high.
- 5.7 We understand the technical argument for the possible need to modify aerial installations, particularly in some areas. We agree broadly with the estimated costs of

replacement but would note that these figures are guides because access at some properties will be easier than others. For example, reluctant landlords of blocks of flats have been an issue in the past and so it cannot be assumed that those households with problems will be able to solve them. A re-point should not be as expensive as replacement as indicated in clauses 3.12 and 3.19. Nevertheless, the bulk of the cost in either case will be an attendance fee and the man-hours and equipment needed for access to the rooftop aerial, the only significant difference being the cost of the new aerial itself.

- 5.8 It is valuable to have engaged the installer community in the project and we would require that emphasis be placed on the need to avoid the risk of speculative and untrained “cowboy” enterprises entering this market. Clear and consistent advice on what needs to be done and the likely range of costs, agreed with installers, should be part of the advice to viewers likely to require aerial changes. Ultimately it is the viewer’s own choice whether or not advice is followed and so, provided adequate advice is available, it is the viewer’s risk if reception is poor.

Question 3: Do you have any information to suggest that our estimate for the number of households that will need to replace their aerials should be different?

- 5.9 As above for Question 1. The Manchester (rooftop only) survey of 2,000 homes in the Winter Hill area did highlight the likelihood that household aerial systems are performing below the level which the planning assumes for coverage prediction which implies that actual effective coverage is less than that predicted (clause 2.7 of the Manchester report). If placed well within the service area, a less than adequately performing aerial, e.g. an old one or one installed in the loft, will not normally lead to difficulties except near service area boundaries where there may be a history of reception difficulty. It is not stated in the survey report how many of the 2,000 homes visited were at the edge of the service area, only that the households were located “uniformly” across it implying that there must be a significant number near the edge.
- 5.10 Nevertheless the test data for each household is available and so it should be possible to extract that information. It is assumed that this has been taken into account in estimating the upper limit of the number of affected households. Figure 3 in the Manchester report provides the Cumulative Distribution Function for all 6 multiplexes plotted against measurement population number and this illustrates some of the variance in reception quality but this method of presentation could be clearer in making its point. A different plot of the same data with signal strength as the X axis and number of sites equalling or exceeding it as the Y axis would be a better way of visualising the variance in reception conditions.
- 5.11 The survey analysis categorised the aerial installations to separate the older ones from the more recent where performance in the former case may not be as optimal as the latter. It is notable that the planning rules assume a rooftop aerial and so no account is taken of the many indoor aerials in use, perhaps connected to second and third household receivers. The Manchester analysis comments on this and implies that

these installations will not experience significant change as a result of the clearance. The reasons given for this conclusion are credible as is the methodology used in the survey itself and the analysis as whole and the uncertainties are reflected in the range of the likely numbers affected (100,000 to 160,000).

Question 4: Do you have any information relevant to our assessment of the average cost of an aerial replacement?

5.12 The figures quoted are consistent with known charges applied by properly trained installers. They may vary across the country and so the estimates given are national averages. No doubt there are other operators in the market who will charge less but will not necessarily perform the installation or remedial tasks correctly or provide good supportive after sales service etc. The viewer always needs to apply “buyer beware” considerations when commissioning work from an installer. The problem is in the viewer being adequately aware of what may need to be done and the installer doing just what is needed and no more and so this is less a technical issue and more a consumer one.

Question 5: Do you have any evidence as to what proportion of viewers may struggle to bear the cost of an aerial replacement?

5.13 We have no direct knowledge to respond to this question.

Question 6: Do you have any information to suggest that our estimate of the number of viewers that may need to repaint their aerials should be different?

5.14 See above and our response to Questions 1 and 3.

Question 7: Do you have any information relevant to our estimate of the cost of aerial repaints or platform changes?

5.15 See response to Question 4.

Question 8: Do you have any evidence as to what proportion of viewers may struggle to bear the cost of an aerial repaint or platform change?

5.16 We have no direct knowledge to respond to this question.

5.17 It is expected that all the services currently available on the DTT platform will be transferred to new frequency allocations without loss. We are advised that it will not be necessary to introduce new technology to allow this within the constrained spectrum, however the IMs will have to be moved in order for this to happen.

5.18 A more efficient coding and transmission technology that uses DVB-T2 and MPEG4 is already in use on the limited licence IMs operated by Arqiva and some new HDTV-

ready sets contain it. Not all TV sets are able to receive services using this new technology; any set purchased around the time of DSO and now about 4-6 years old will not be equipped for DVB-T2/MPEG4. Such sets are still of value to viewers and so should not be forcibly replaced in order to receive programmes that are available to those viewers now but which may be transferred to a new technology. This category of viewer situation is not mentioned in the consultation or listed in Table 1; DVB-T2/MPEG4 does appear in the final bullet of clause 2.4 but not in terms of a viewer situation. We appreciate that there is a separate consultation that deals with this matter in more detail; we will respond to the matter in a separate response.

VIEWER SUPPORT SCHEME

- 5.20 We welcome particularly clauses 3.20 to 3.38 for their extensive analysis of viewer Help Schemes. The DSO and 800 MHz clearance experience illustrate clearly the need for such a scheme for this migration. Any such scheme will need to be appropriately adequate and will incur costs which will need to be funded. We agree that any scheme must comprise both a public information element and a financial element.
- 5.21 Clause 3.20 suggests that an option for supporting Help Scheme costs might be publicly funded. Government funds are public funds paid by viewers as citizens, as are funds from the TV licence fee. We disagree strongly that any cost related to migration from the 700MHz bandwidth should be borne by the public in any form. The primary beneficiaries of this change of spectrum use are the MNOs who have applied aggressive pressure to gain this spectrum, using what VLV considers to be dubious traffic forecasts to justify that claim. If their projections are indeed correct then there should be no difficulty in their generating sufficient revenues and profits to meet the costs of mitigation as estimated in the consultation. Thus, they should ultimately fund the migration in full, including the costs of infrastructure changes as well as any viewer or broadcaster costs.
- 5.22 Considering that the phasing of clearance activities will precede identification of any licence holder, the source of funding for clearance work is unclear. It may be necessary therefore for government to initiate the process with a view to recovering those costs as a condition of licence. Whilst this may reduce the fees MNO's would be willing to pay to government for the spectrum licence they will recover their costs in the tariffs applied to their services. Their subscribers will have the choice whether or not to accept those terms, whereas affected viewers have had no say and will have no choice in this migration.
- 5.23 These matters were explored in previous consultations where the costs versus benefits were found to favour the clearance. The implications were that viewers, as citizens, would benefit more from the new mobile services than they lost as viewers of DTT in bearing the enforced costs of clearance. VLV was not completely convinced by that analysis.

- 5.24 Government and broadcasters need to be participants in any public information campaign, the former to provide weight and justification to the project and the latter because they have the necessary and appropriate communication channels available.
- 5.25 It is obvious from experience that there are known vulnerable groups of viewers that will need help in dealing with the impact of these changes to DTT services.
- 5.26 We cautiously accept the estimates of 3.23 *et seq* and Table 2 largely because we have no independent means of verifying them and also because they seem to be based on past experience. They do not seem excessive and they do not need to match the costs of DSO because that was a much larger project. We assume that some note has been taken of experience with the 800 MHz clearance. We note that the figures given are estimates but also note the wide range of some of them, presumably because there are still uncertainties about some of the elements of cost.
- 5.27 We fully agree with Clause 3.28 that a single body needs to be in overall charge of the Help Project. This avoids the obvious pitfall of claims for support falling between different organisations. It also avoids public confusion.
- 5.28 VLV understands and supports the need to isolate genuine claims for support that relate directly to the clearance project and not to other pre-existing conditions giving rise to reception problems. We accept that the identification of such genuine claims could be difficult and so perhaps the scheme may have to err on the side of caution which implies a degree of judgement on the part of the administrators.
- 5.29 The consultation proposes some measures to assess reception difficulties and their solutions. These seem sensible although the table in clause 3.37 exposes the issues behind them. We would agree that a simple reliance on post code checking and a telephone advice line will probably not be sufficient on its own, but could be a useful screening process to identify cases requiring further investigation.
- 5.30 The use of test transmissions would also be helpful in identifying problems ahead of a full launch and so we would encourage the use of such transmissions. They would be helpful in identifying and confirming coverage predictions in areas where it is expected that predictions are not fully reliable e.g. because of terrain or known obstructions. However, for specific problems at specific locations it is hard to avoid the option of actual investigative visits by a technician which is where costs are likely to escalate. Total costs for this exercise are very hard to measure with any certainty.

Question 9: Are there any other matters the viewer support scheme should cover?

- 5.31 As a matter of principle, any support system must serve the public and not be subject to restraints due to other interests. This clearance is being imposed on the public and justified by an analysis that claims to be beneficial to the “public” at large, taken to be citizens not viewers. A very substantial number of the public are DTT viewers who

may not necessarily benefit from this imposition. We would expect that any potential loss of service because of these changes, especially where services are transferred to new technology, is made absolutely clear to viewers. Clarity about what viewers should expect will deflect later confusion and load upon the Help Scheme.

Question 10: Are there any other elements a viewer information campaign would need to include? Do you have any comments on or further evidence to inform the above estimates of the cost of providing information and advice to viewers? Please provide supporting evidence for any adjustments that you think may be relevant.

5.32 It is obvious that the experience of the 800MHz clearance is very relevant to this latest case and so we would expect that all the proposed elements have been identified from that experience. The 700MHz clearance is substantially a repeat of the previous 800MHz one and so we would expect no significant additional elements. As in the answer to Q9 we would expect that any potential loss of service because of these changes, especially where services are transferred to new technology, is made absolutely clear to viewers. Clarity about what viewers should expect will deflect later confusion and load upon the Help Scheme.

Question 11: Do you have any comments on information which is relevant to our assessment of the potential costs of administering a Help Scheme?

5.33 It is obvious that the experience of the 800MHz clearance is very relevant to this latest case.

Question 12: Do you have any evidence to further inform our assessment of the likelihood of viewers that suffer from un-related pre-existing reception problems erroneously making claims against a 700 MHz Help Scheme?

5.34 DTT is supported by radio transmissions which are always subject to vagaries of local conditions which planning rules and their predictions cannot fully account for. Viewers have a responsibility to assure themselves that their installations are adequate but to do that they must be adequately informed. It is doubtless the case that there are some viewers who continue to experience reception difficulties; some of these may well be improved by the changes but, equally, some new cases may arise too. Some of the conditions and areas in which this is the case are known, and so the information provided to viewers must include these more general guidelines as well as clearance-specific ones.

5.35 It must be acknowledged that some viewers obtain services from outside their nominal areas by virtue of favourable propagation conditions and/or particular location of reception. There is no obligation to continue to serve such viewers especially if they have a more appropriate source transmitter. However if that transmitter is for some local reason partially obscured and the scan/search/re-tune

facility of a receiver selects the “out of area” transmitter as the strongest source the viewer cannot be blamed for using the transmission that works best but which may not provide full planned coverage. Some pre-existing reception difficulties of this kind should not be excluded from the support system simply because the “wrong” transmitter is in use.

- 5.36 DTT as Freeview is a public service and so it is essential that viewers are supported, not only because of this particular clearance but also because, as licence fee payers, they have a reasonable degree of entitlement to an adequate service provided that they also play their part in installing suitable reception equipment. As we have suggested in 5.28 above, and in light of the Viewer Survey (see Section 6 below), separating current reception problems from those caused by clearance will be hard to judge by administrators without detailed knowledge of those problems and clear and strong links between a Help Scheme and existing Freeview support systems.

Question 13: Do you have any additional information to further inform our cost estimates and assumptions of the effectiveness for the different triage methods? Are there any other triage methods which should be considered? Please provide supporting evidence for any adjustments you think may be relevant to our current estimates.

- 5.37 VLV has no direct experience in this area, however it seems sensible as a minimum level of provision to have an effective web site that provides first-line support and is able to offer relevant advice that applies locally, i.e. not just a national overview. This implies a level of detailed preparation which could draw upon the experience of the 800MHz clearance. It implies the investment of sufficient funds to establish such a system but this may be better and more cost effective than a fully manned service.
- 5.38 Not all viewers will have access to web sites (estimates suggest that up to 20% of the population are without internet access, however it is not clear if this includes internet capable mobile telephones). It will be necessary therefore to have a telephone based support service that can screen problems for Frequently Asked Questions using an automatic system which may be able to share database systems with the web site.
- 5.39 However, it is very likely that some viewers will need additional support supplied by a manned service. This latter option will be more expensive to operate but we suggest that without such provision of a person to person communication a certain section of the public will be left unsupported. If the project implements clearance regionally in sequence, as was the case with DSO, then the support system can be eased by concentrating on each affected region in turn.

VIEWER SURVEY

- 6.1 We welcome the supplementary document which provides a detailed survey of reception issues across all delivery platforms and how problems were resolved. This is

very valuable information that will support the planning of any viewer Help Scheme. It is notable how many viewers on all platforms tolerate poor reception.

- 6.2 We note that 42% of those surveyed used DTT and 73% of those used an external aerial. DTT is still a much used and valued means of obtaining PSB services.
- 6.3 We note that there is a skew towards older viewers having more difficulties with resolving reception problems.
- 6.4 It is notable (Slide 6) that a small but significant number of DTT viewers frequently experience problems of pixilation, mostly short term (Slide 8). If persistent, this is indicative of either deficient local coverage and/or poor aerial systems. It would have been useful to know where in the respective service areas the various locations were.
- 6.5 It is notable that a certain amount of self-help is taking place already and not only confined to DTT households. However there is also a large degree of tolerance, a significant number of viewers on all platforms “hoping that the problem will go away” even though some of these are persistent.
- 6.6 It is of concern that 32% of DTT viewers surveyed considered that disruption was “extremely disruptive”. A further 24% found disturbances “moderately disruptive”. Even though the sample is only about 2,000 viewers, this level of disturbance is worrying and requires some action to explore the causes, some of which may be due to poor reception installations rather than coverage deficiencies. We recognise that some of the worst populations affected are small. It is clear (slide 11) that some viewers are not seeking help but are tolerating the low service quality hoping it will resolve itself. In some cases, where weather etc. may be the cause of marginal reception, this may be a temporary resolution; nevertheless the baseline reception conditions are clearly not good.
- 6.7 Slide 12 is useful in illustrating how other platforms behave. DTT seems to be twice as problematical in terms of on-going reception issues, but non-DTT households appear to experience greater disruption. Slide 13 shows that resolution of problems on other platforms is similar to DTT.
- 6.8 Slide 14 gives a list of the advice levels given to viewers with problems; presumably this covers all platforms. It would seem (slide 16) that the majority of viewers (73%) who had looked for help were satisfied to some degree with the results of assistance. However 10% were very unsatisfied; the reasons are perhaps because the advice/help given was unpalatable, possibly involving costs, or because there was no solution available at that location (Slide 18) which appears to apply to all platforms albeit in small numbers. Extreme dissatisfaction seems to be much greater (slide 17) for DTT viewers and satisfaction levels are better for non-DTT viewers. We could speculate that because of its propagation characteristics DTT reception problems are more difficult to resolve than other platforms.

- 6.9 We note from slide 20 that disruption occurs for 29% of those surveyed, which is rather high, and that the profiling is broadly even across the categories with notable increases for the disabled, the elderly and for Wales (terrain issues?). Slide 21 again illustrates that many viewers in all categories and on all platforms consistently hope that any problems will go away and so do not seek help. This is of some concern but, from the point of view of a Help Scheme, it is the viewer's choice. Those that do take action tend not to attempt to resolve the issue themselves.

SECTION 5: IMPACT AND COSTS TO PMSE USERS

- 7.1 VLV has no direct involvement in the effects of migration on PMSE but nevertheless we have sympathy for those organisations that will have to replace equipment. Many of these organisations are directly involved in programme production for broadcasters, as are the broadcasters themselves. It is important that the PMSE sector obtains the means to carry out their businesses.
- 7.2 We would support any claim by PMSE users that all costs are borne by the mobile data companies since they are the beneficiaries of the changes in spectrum use.

Question 14: Have there been any developments since 2014 which would affect our estimate of the amount of equipment that PMSE users will need to replace as a result of 700 MHz clearance?

Question 15: Are you aware of any developments since the 2014 Statement that would affect our cost estimates?

Question 16: Do you have any information or evidence of the likely unit cost of new equipment which operates in the 960-1164 MHz band?

Question 17: Have we correctly identified the main categories of PMSE user that 700 MHz clearance will affect? If not, please provide examples of stakeholders which do not fit broadly into any of the groups mentioned.

Question 18: Do you have any comments on our assessment of the proportion of equipment the different users types account for?

Question 19: In addition to any information provided in response to the survey, do you have any other evidence as to how clearance may financially affect each of the different categories of PMSE equipment owner identified above?

VLV does not have the relevant experience to respond to these questions.

SECTION 6: NEXT STEPS

- 8.1 VLV would expect that when current studies of the altered DTT frequency plan and multiplex re-ordering are complete, the results will be communicated to the public with precise details of changes for each transmitter group in each area. We would also expect an indication of when, where and how the clearance project is to be implemented together with full details of the viewer help plan.