

Vodafone comments on Ofcom's Consultation (July 08) on the Digital Dividend Review (band manager award)

The digital dividend in the UHF band is the most important spectrum to have become available in the UK in at least the last decade, and probably for the decade to come. It falls in the "sweet spot" in the radio spectrum that is suitable for both capacity and coverage, and is therefore attractive for a wide range of applications. The DDR spectrum awards are therefore the most significant that Ofcom has yet undertaken.

For historic reasons, the UK proposals for the digital dividend are not consistent with emerging proposals with Europe following WRC-07. Vodafone believes that Ofcom must align its proposals for the upper sub-band with the FDD bandplan being developed by CEPT for mobile services. As a result, the PMSE use currently in channel 69 would need to be moved to the centre gap of this bandplan. However, we believe that this would be in the overall interests of PMSE users:

- This would provide long term security for PMSE use, of 20 years or more.
- The CEPT bandplan would be harmonised in Europe, which means that the PMSE spectrum could also be harmonised.
- The AIP price for PMSE use would be low, because the centre gap would not have any alternative valuable use.
- There would probably be slightly more spectrum available for PMSE.
- Ofcom is able to provide compensation for the costs of the move.
- The move would not happen until after the Olympics in 2012, which would give ample time to prepare.

This response focuses on issues that are related to Vodafone's proposals for the 790-862MHz band, as described in our response to the cleared spectrum award consultation.

Question 1: The executive summary sets out our proposals for the DDR band manager award. Do you agree with these proposals?

See our responses to individual questions below.

Question 2: Do you agree with our proposal to award access rights to channel 38 that will last as long as we sustain the protection of radioastronomy in the UK?

Given the stringent constraints on the use of channel 38, it is possible that PMSE could be the most valuable use. If this channel is awarded for mobile or broadcasting use, this use is likely to be limited to the north of the UK. This channel could then still be available for PMSE use in much of UK. It is important that Ofcom's agreement with the PMSE band manager allows it either to acquire this spectrum (or any other spectrum suitable for PMSE) or manage it on behalf of the licence holder for PMSE use.

See also our response to question 36.

Question 3: Do you agree with our proposal to include the interleaved spectrum in channels 61 and 62 in the cleared award?

Yes.

In our response to the cleared spectrum award, Vodafone has proposed that channels 61 and 62 should be fully cleared, and the transmissions on these channels moved to either the lower sub-band or interleaved channels.

Question 4 – 5: No comment

Question 6: Do you agree with our general approach of awarding the remaining 49 Ofcom-managed bands allocated to PMSE but lying outside the digital dividend to the band manager?

In our response to the cleared spectrum consultation, Vodafone proposed that Ofcom should allocate to PMSE the centre gap of the CEPT FDD bandplan for 790-862MHz. This bandplan is still under development, but the centre gap will certainly be at least 8 MHz wide (most probably, 10 or 12MHz).

Vodafone has proposed that guard bands should also be defined at the boundaries of the lower sub-band with existing DTV. Depending on the outcome of the auction, there may also be a residue of spectrum retained by Ofcom. (see our response to the DDR cleared spectrum consultation, question 37). We suggest that this spectrum could also be managed by the band manager.

Question 7: Do you agree with our proposal to award key PMSE bands to the band manager?

Yes, except that the centre gap should replace channel 69.

See our response to question 6 and our response to the cleared spectrum award consultation.

Questions 8 – 10: No comment

Question 11: Are there any other types of DTT transmission that should be protected from potential cognitive devices or other factors that we should take into account?

See our response to the interleaved award consultation, question 3.

Question 12: Are there any potential future PMSE applications other than currently available wireless microphones, in-ear monitors and talkback systems that you consider should be protected from potential cognitive devices?

Digital radio microphones are now beginning to appear on the market. One of the claims for these devices is the support of more channels within a given bandwidth (i.e. greater spectrum efficiency). Ofcom should therefore not hamper the deployment of these devices. The radio

interface of these devices is proprietary, so there is no common “signature” that can be used by cognitive devices to avoid causing interference.

See also our response to the interleaved award consultation, question 3.

Question 13: Is there sufficient evidence to require protection for other services such as mobile television, bearing in mind the potentially negative implications of such protection for deploying cognitive devices?

See our response to the interleaved award consultation, question 3.

Question 14: Do you have any views on the appropriate notice period for temporary PMSE access to channels 63-68 and/or on whether we should extend temporary access to channels 31-40?

See our response to the cleared award consultation, question 6.

Question 15: No comment

Question 16: Do you agree with our proposal that the licence to be awarded in respect of bands currently used for PMSE should be subject to no initial period?

The proposals for the initial and notice periods and questions 16-20 suggest a lack of confidence by Ofcom in its own proposals in this consultation. This results in a lack of certainty both to potential band managers and to PMSE users. This lack of certainty has not been taken into account in the impact assessment of the four options considered for management of PMSE spectrum (Table A1).

Question 17: Do you agree with our proposal that the licence to be awarded in respect of bands currently used for PMSE should be subject to a notice period for variation or revocation on spectrum-management grounds of one year?

This section of the consultation document suggests that the reasons for variation or revocation would be related to the performance of the band manager. However, “spectrum-management grounds” are far broader than this. This might suggest a lack of long-term certainty about the availability of PMSE spectrum for which there are potential alternative high value uses, such as channel 69.

Vodafone proposes that the PMSE should instead use the centre gap of an FDD bandplan for 790-862MHz (see our response to the cleared award consultation for details). This is too small to be used for mobile services, and we do not expect this to change¹. PMSE use in the centre

¹ It will not be possible to operate mobile services within the centre gap because the width defined in the CEPT bandplan to be on the limit of the state of the art of the key components (especially the duplex filter in the terminal). We do not expect this to reduce significantly in the future because the performance of current components is approaching the fundamental physical limits of the materials from which they are made. Even if technology developments in the very long term allowed a smaller centre gap, it would not be possible to implement this because of the need to support legacy equipment.

gap would therefore have security for the duration of the licences in the paired spectrum, which under Ofcom's proposals for the cleared spectrum award would be at least twenty years.

Question 18 – 21: No comment

Question 22: Are there bands where PMSE users require earlier certainty about longer-term access in the interests of promoting spectrum efficiency than our timetable for the band manager award allows?

Regarding channel 69, see our response to question 17.

Questions 23 – 28: No comment

Question 29: Do you agree with our proposal to determine the band manager's licence fee first by deriving estimates of the opportunity costs of the spectrum to be awarded and second by setting band-by-band prices that strike an appropriate balance between our objectives for this award?

The centre gap of the UHF FDD bandplan will not have any use for mobile services or broadcasting. The AIP should therefore be set far lower than Ofcom proposes for channel 69.

We would note that, if Ofcom applies its calculated values for channel 69 of £1681 per year per channel, the move of PMSE spectrum to the centre gap would quickly become cheaper for PMSE users, even if they needed to buy new equipment.

Question 30: What are your views on the options for phasing in AIP to full opportunity cost?

We suggest that Ofcom could instead reduce the cost of existing PMSE licences for channel 69 in the period leading up to September 2012, when we propose that PMSE use in channel should move the centre gap of the FDD bandplan. This would provide some compensation for the new equipment that many users will need. Ofcom could also make use of the Spectrum Efficiency Scheme², which is intended for this type of situation.

Questions 31 – 34: No comment

Question 35: What are the merits of our proposed approach to providing spectrum information, in particular concerning the type of information that might be helpful and any impact that publishing information might have both on licensees and the wider spectrum market?

See our response to the DDR cleared award consultation, question 19.

² Wireless Telegraphy Act, 2006; Section 1 (5).

Question 36: Do you agree with our assessment of whether our approach to awarding this spectrum appropriately promotes competition and efficiency?

We agree with Ofcom's analysis that, in this specific case, administrative costs to spectrum users of having multiple spectrum suppliers are likely to outweigh the competition benefits. Provided that the arrangements for the PMSE band manager are carefully defined, this is likely to lead to the most efficient use of spectrum. However, having reached this conclusion, it is unclear how Ofcom's proposal to award spectrum to a single band manager promotes competition more effectively than the current approach of contracting out.

There is likely to be further spectrum within the UHF band that could be used for PMSE, which Ofcom does not propose in this consultation to award to the PMSE band manager:

- Interleaved channels not yet awarded (it is not clear in the consultation document how this will be treated).
- Residual spectrum not awarded in the cleared spectrum award.
- Guard bands at the boundaries of the upper and lower sub-band, as proposed in Vodafone's response to the cleared spectrum award.
- Guard bands between new services within the cleared spectrum.

Ofcom needs to ensure that this spectrum that is under its control but unused is made available under appropriate terms (which could include a short notice period). For spectrum that has been awarded but is not used (such as the guard bands between services) Ofcom should facilitate arrangements whereby the spectrum holders can easily make this spectrum available for PMSE use if they wish.

Questions 37 – 39: No comment

Question 40: Do you agree with our proposed approach to spectrum access for other major events?

See our response to question 36.

Question 41 – 43: No comment.

Annex 5: Impact Assessment

For our comments on the impact assessment, see our responses to the related questions above.