

Question 1: Have we correctly identified and characterised the potential costs set out above, and what other costs ? if any ? should be taken into account in our assessment?:

We consider that generally the potential costs have been identified and correctly characterized. However if the spectrum is released at the wrong time there may be an additional potential cost resulting from the increased costs of a premature release or the lost benefits of releasing the spectrum too late. We note that Ofcom is trying to overcome this timing difficulty by the use of market mechanisms but we are not convinced that appropriate procedures can be developed. We also consider that there may be potential costs arising from any consequential changes to other frequency bands resulting from the changes to the 700 MHz band.

Question 2: What evidence, whether qualitative or quantitative, should we obtain and/or take into account in assessing each of these potential costs? Please identify any sources of specific evidence to which we should have regard.:

The current work programme appears to be fully comprehensive and we have nothing further to add.

Question 3: Have we correctly identified and characterised the potential benefits set out above, and what other benefits ? if any ? should be taken into account in our assessment? :

We consider that the benefits have been correctly identified and characterized.

Question 4: What evidence, whether qualitative or quantitative, should we obtain and/or take into account in assessing each of these potential benefits? Please identify any sources of specific evidence to which we should have regard. :

The current work programme appears to be fully comprehensive and we have nothing further to add.

Question 5: In particular, what is your view of the likely future demand for additional sub 1 GHz spectrum for the provision of mobile data services, and what evidence supports this view?:

We agree that the volume of mobile data is likely to increase. However we consider that there is a need to examine the possibility of using the existing sub-1 GHz spectrum more efficiently so as to carry this data. A possible means of achieving this increased efficiency might be by the use of WSDs and further research into this issue is required. A possible alternative to be considered is the off-loading some of this traffic onto higher frequencies. Only after these options have been taken into account should the provision of more sub-1

GHz spectrum be considered and the amount of spectrum required is to some extent dependent on the outcome of the study into the feasibility of these options.

Question 6: Should we place different weights on some costs and benefits than on others, for example depending on whether costs would be borne by consumers, DTT operators, or mobile operators? :

We consider that it is difficult to justify placing different weights on some costs and benefits. However we take the view that the costs should be placed on those most able to pay them.

Question 7: Do you have any other comments on the work we are currently undertaking on potential costs and benefits? :

At this stage we have no additional comments on the work that is being undertaken.

Question 8: Have we correctly identified the costs and benefits that could vary depending on the timing of release, and the impact of those factors? Are there other costs and benefits which would vary depending on the timing of release of the 700 MHz band which we should take into account?:

We consider that generally most costs and benefits have been identified but see our response to Question 1 regarding the costs of releasing the spectrum at an inappropriate time.

Question 9: How quickly could the 700 MHz band be released? What would be the impact on DTT infrastructure costs of releasing at the earliest possible time compared to a later time? What would be the factors which affect these costs?:

We consider that the focus should be on releasing the spectrum at the correct time rather than seeing how quickly the spectrum can be released. Beyond this we have no additional comments.

Question 10: How, and to what extent, are the costs for existing (PMSE) and potential (WSD) interleaved users of the 700 MHz band likely to vary depending on the timing of release? What would be the factors which affect these costs?:

No comment

Question 11: Should we consider any other cost-related arguments / evidence in favour of an earlier or later release date?:

There is a need to examine the relationship between the costs of releasing the spectrum too early compared to the lack of benefits resulting from releasing the spectrum too late. We note that Ofcom is considering the possible use of market mechanisms to address this issue but we are not convinced that such mechanisms are a viable option. This consideration of the costs of an earlier or later release should also take into account other users of the band such as PMSE and WSD.

Question 12: What would be the impact on mobile broadband delivery and competition of releasing the 700 MHz band later rather than sooner? :

We consider that this is a significant issue and further study is required to determine the full impact.

Question 13: Should we consider any other benefit-related arguments / evidence in favour of an earlier or later release date?:

Again we consider that this is an issue that requires further study

Question 14: Is the range of potential dates for release likely to be wide enough to merit consideration of an incentive auction approach?:

We consider that there is the potential for a wide range of release dates but we are not convinced that an incentive auction is the correct approach for determining the specific release date.

Question 15: If so, what are the challenges to designing an effective incentive auction in this case, and how might these challenges be addressed? :

There are many challenges in designing an appropriate incentive auction and we are not convinced that these challenges can be met. There is also the need to make the auction process transparent and we consider that this might be difficult with an incentive auction.

Question 16: If we followed an incentive auction approach, how should we take account of wider costs and benefits ? i.e. those not felt by participants in the auction?:

The wider costs and benefits are a significant issue and it does not appear possible to include them in the auction design. It might be possible to include a separate additional charge to take account of these costs but we consider that this could distort the auction process. This additional charge would be pre-determined before the auction and would form a completely separate charge additional to the value determined by the auction. We consider that it is essential that these wider costs and benefits are taken into account though currently the appropriate means of achieving this are not clear.

Question 17: Do you have any views at this stage as to the parameters of an incentive auction, such as the default date and payment mechanism?:

Currently we have no views on the parameters for an incentive auction.

Question 18: Is there a version of the overlay auction approach which could be suitable for 700 MHz release?:

We consider that an overlay auction is a more appropriate approach than an incentive auction. However at this stage it is difficult to specify a realistic design of such an auction.

Question 19: What are the benefits and risks of conducting an overlay auction in this case?:

We consider that the benefits of an overlay auction are

- More certainty over the amount of spectrum that is available
- There appears to be more flexibility in the timing of the release of spectrum so that the needs of the parties involved can be better taken into account and met

The difficulties are

- It may reduce the value of spectrum
- There is a lack of transparency in the process
- It does not take into account the broader social value

Question 20: Have we correctly identified and characterised the potential impact of 700 MHz release on consumers accessing DTT? What other impact ? if any ? should be taken into account in order to identify pre-emptive measures to reduce this impact?:

We consider that the impact has been correctly identified.

Question 21: Do you have any comments on the pre-emptive measures relevant to DTT identified above? Are there other pre-emptive measures we should be considering?:

We have no additional comments

Question 22: Have we identified the correct measures to support consumer adoption of DVB-T2?:

Generally yes though there might be a need to better understand the drivers for the consumer adoption of DVB-T2

Question 23: What regard, if any, should we have to wider technical evolution of the DTT platform, such as HEVC? :

Specifically it is appropriate to consider the possible technical evolution of the DTT platform and generally there is a need to better understand the future evolution of broadcasting.

Question 24: Have we correctly identified and characterised the potential impact of 700 MHz release on PMSE users? What other impact ? if any ? should be taken into account in order to identify pre-emptive measures to mitigate this impact?:

We consider that the potential impact on PMSE users has been correctly identified.

Question 25: Do you have any comments on the pre-emptive measures identified above? Are there other pre-emptive measures we should be considering?:

Generally we are in agreement with the proposals though we consider that there should be a greater emphasis on PMSE operating in fragmented spectrum in future. We consider that this is a concept that needs further development.

Question 26: Do you have suggestions for how we can assess the impact on PMSE users and equipment if 700 MHz is no longer available for PMSE use?:

We have no proposals to put forward.