



Issue 1

BT's response to

VHF / UHF spectrum planning

*Call for inputs to Ofcom's plans for the potential
procurement of models, tools & services*

(Issued by Ofcom on 26th July 2013)

Introduction

BT welcomes Ofcom's initiative to review UHF and VHF spectrum planning, including the models and tools available for this activity. This is arguably long overdue given the intensive activity in recent years to plan and deliver changes to the TV band spectrum.

Our direct experience of engagement with Ofcom on the TV White Spaces activity has highlighted to us the limitations of the current arrangements regarding access to tools and data relating to broadcasting spectrum. Better tools suited to modern spectrum management challenges, available to Ofcom and wider UK industry, should lead to more optimal use of spectrum and support innovation and competition.

New services using spectrum sharing should be encouraged, and accessibility to suitable tools will assist discussions and agreements with other spectrum users. It seems that the focus is upon VHF and UHF up to the top of the DTT bands only, whereas we see spectrum sharing as being a key enabler for making more spectrum available up to at least 3GHz. Either in this exercise or a future one, we would like similar agreed tools and models to enable spectrum sharing within other bands.

Our replies to the questions

Question 1. Do you have a specific requirement for access to a new planning model and if so, what are your specific requirements?

Yes, we would like access to an implementation of an agreed UK planning model for VHF/UHF bands, and related input and output data in relation to existing network deployments, so that we can examine sharing possibilities that will lead to more optimal use of spectrum and to be more confident as to the risks of interference that may arise under different sharing scenarios. A specific requirement is the ability to model the indoor use of sharing devices. Probably this is an add-on to a wide-area prediction tool. Another requirement is the ability to accurately assess the interference into sharing devices from licensed VHF / UHF transmissions to satisfy the objective of securing the optimal use of spectrum, whereas currently the focus seems to be only upon protection of licensed services. For assessing interference into sharing devices, we need accurate information on powers and radiation patterns of transmitters and agreed models for propagation and statistical summation.

Question 2: Have we correctly identified and characterised the potential options set out above, and what other options – if any – should be taken into account in our consideration?

Yes we agree with the Options that Ofcom has identified. We would however like the terms and conditions to allow access to the source information (antenna patterns etc), to the assumptions, and to the algorithms used to calculate coverage and interference.

Question 3: Do you have a preference for (one or more) particular options?

We have no strong preferences but a commercially available model, tailored to specific Ofcom requirements, and available to all stakeholders so they can run it, may be best. Inevitably new developments, such as planning of Single Frequency Networks (SFNs) and inclusion of new sharing scenarios, will require the models to be adapted from time to time. Sharing technology will continue to evolve, so it will be important to have a mechanism for reviewing and agreeing changes in the tool, for example to thresholds and algorithms. A process is needed for tool configuration updates and control and we feel that Ofcom is best placed to own that process, which could involve meetings from time to time.

We would not propose a 'quick and dirty' option because we feel it would lead to lengthy discussions with stakeholders and overall not provide a faster route to commercialisation of services.

Question 4: Have we correctly identified and characterised the potential impacts set out above, and what other impacts – if any – should be taken into account in our consideration?

Yes. It seems appropriate that Ofcom as manager of the broadcasting spectrum bands has ownership of the definitive models and tools and the ability to make that information available to other stakeholders as appropriate. Whilst there may be a period of uncertainty as the new models are developed, the longer term benefits should outweigh this and the sooner the work is started the better.

Question 5: What evidence, whether qualitative or quantitative, should we obtain and/or take into account in considering each of these potential impacts? Please identify any sources of specific evidence to which we should have regard.

It will be important to validate new models against real world situations and to compare with other existing models where relevant. This will require close engagement with affected stakeholders before reliance on the new models. It will be an ongoing process as technology

evolves and relates to the configuration control process (see our response to Q3). One area of concern we have relates to accurate assessment of additive interference and the long-term variations of such interference. We are depending upon decades old models and we would like to see an on-going measurement programme to improve aggregate interference models for broadcast signals and sharing device signals. This would apply regardless of the model actually used (proprietary / commercial).

Question 6: 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 considerations?

Yes the benefits identified by Ofcom are the main ones. Additionally it may be easier to manage future updates and changes to the model if it is under Ofcom's ownership.

We would like to consider how the tool fits into the wider strategy for spectrum sharing, for example could it be used for other bands, or how would it influence or integrate with other tools for other bands. What is Ofcom's longer term strategy here – we would discourage a 'one tool per band' approach.

Question 7: What evidence, whether qualitative or quantitative, should we obtain and/or take into account in considering each of these potential benefits? Please identify any sources of specific evidence to which we should have regard.

A benefit of procuring new models and making them accessible to industry is that opportunities to improve spectrum efficiency and evaluate sharing opportunities will be facilitated. The additional transparency should improve confidence in spectrum management decisions as these can be verified by a wider range of industry players and it will be easier for industry to validate and propose various technical solutions.

Question 8: Should we place different weights on some impacts and benefits than on others?

The benefit of greater transparency and ability of industry to contribute innovative ideas for more efficient use of spectrum is particularly important.

Question 9: Do you have any comments on the work plan we have outlined? e.g. do you agree with our proposed timing and approach for securing a new model?

The work plan as set out seems appropriate.