



BT Response to the Ofcom consultation on:

**"Award of available spectrum : 10 GHz, 28 GHz,
32 GHz and 40 GHz"**

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EXECUTIVE SUMMARY

- 1 BT welcomes this Ofcom consultation on the “Award of available spectrum :10 GHz, 28 GHz, 32 GHz and 40 GHz”. We support Ofcom’s declared plans to make unused spectrum available to the market as soon as possible, and we support an award on a technology and service neutral basis.
- 2 Concerning the 10GHz band we are fully in agreement with Ofcom’s proposals. However, we would request more details about the precise locations at which the MOD use of the 10GHz band is prevalent since the information provided so far is insufficient for us to determine the likelihood of interference occurring and hence the quality of service that would be expected. Similarly, we would wish to better understand the risk of interference from radio amateurs in this band and what Ofcom is doing to monitor and enforce the “non-interference” basis of that use and to quantify the risks.
- 3 BT fully supports Ofcom’s proposals in relation to the 32GHz band.
- 4 BT considers that the 40GHz band should be made available as part of the 10, 28 and 32 GHz auction. We have arrived at this view on the basis that the marginal costs to Ofcom of including 40GHz in the proposed awards should be small, and that it would provide an opportunity to stimulate innovation. We would suggest that three paired packages of 500MHz could be the most suitable packaging arrangement for the award.
- 5 BT would welcome the opportunity to further discuss any of the issues raised in our response should Ofcom consider this helpful.

BT Response to the Ofcom consultation on:

“Award of available spectrum : 10 GHz, 28 GHz, 32 GHz and 40 GHz”

1. INTRODUCTION

BT welcomes this Ofcom consultation on the “Award of available spectrum : 10 GHz, 28 GHz, 32 GHz and 40 GHz”. We support Ofcom’s declared plans to make unused spectrum available to the market as soon as possible, on a technology and service neutral basis, and in accordance with the timetable set out in the Spectrum Framework Review : Implementation Plan and the subsequent Ofcom statement [1].

BT’s main concern with the present Ofcom proposals is that the 40GHz spectrum is being held back due to apparent lack of demand. In our comments below we explain why we believe this may not be the best course of action and make proposals as to how Ofcom could make the band available to support innovation leading to productive use of the band.

Our detailed comments on the various proposals and answers to the specific questions that Ofcom has posed are given below.

2. DETAILED RESPONSE TO THE CONSULTATION QUESTIONS

1) Do stakeholders agree with the proposals for the award of licences in the 10 GHz, 28 GHz and 32 GHz bands in 2007?

BT is generally in agreement with Ofcom’s proposals for making the spectrum available in the manner proposed (i.e. simultaneously awarding licenses in multiple frequency bands).

We note that the Interface Regulations that are referenced within the document are not available for us to examine at this stage. We thus reserve our position on these until we can review the contents.

Concerning the 10GHz band we are fully in agreement with Ofcom’s proposals. However, we would request more details about the precise locations at which the MOD use of the 10GHz band is prevalent since the information provided so far is insufficient for us to determine the likelihood of interference occurring and hence the quality of service that would be expected. Similarly, we would wish to better understand the risk of interference from radio amateurs in this band and what Ofcom is doing to monitor and enforce the “non-interference” basis of that use and to quantify the risks.

2) Do stakeholders agree with the proposal to include in the award of the 32 GHz band that portion of the band that has been open since 2003 for point-to-point applications?

BT agrees that it is appropriate to make the whole of the 32 GHz band available in the manner proposed. The lack of assignments in this band to date may reflect the

fact that the equipment for this band is not widely available and hence is more costly than other bands where individual fixed links licenses are also available. The availability of blocks of spectrum that can be self-managed, and within which the operators can have confidence as to the long-term availability of spectrum, and having individual link coordination and authorisation within their own control, and without the constraints of link length policies might provide an incentive for operators to invest in this band. There are plenty of other substitute bands where per-link licensing is available and it therefore seems reasonable to award the entire 32 GHz band as Ofcom proposes.

3) Do stakeholders agree with the proposal to defer the release of the 40 GHz band and review the position in two years' time?

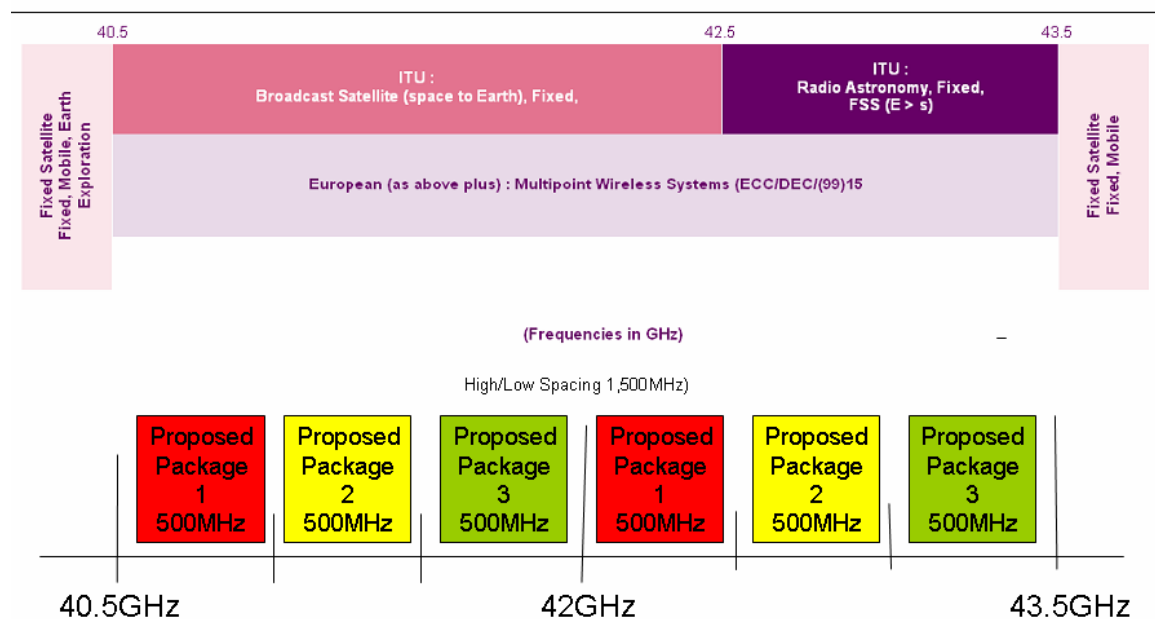
BT has noted that in the July 2005 Interim Statement on the SFR:IP [1] it was mentioned that a part of the 40 GHz band would be available for commercial testing in 2005/6, and that Ofcom intended to continue to make progress on the 40GHz award with a market study and to keep the timing of the awards under review.

BT considers that the 40GHz band should be made available as part of the 10, 28 and 32 GHz auction. We have arrived at this view on the basis that the marginal costs to Ofcom of including 40GHz in the proposed awards should be small, and that it would provide an opportunity to stimulate innovation. We would suggest that three paired packages of 500MHz could be the most suitable packaging arrangement for the award.

The inclusion of the 40GHz option within the award process would also ensure that the widest range of requirements can be accommodated within the spectrum to be awarded, including spectrum for which relatively wide bandwidths would be available to support high capacity systems if required.

A possible scheme for the 40GHz award is illustrated in Figure 1 below.

Figure 1: Possible 40 GHz spectrum packaging



If Ofcom is unwilling to include the 40 GHz band as part of the 10/28/32 GHz award process, we would suggest that the band is made available to operators on an administratively priced basis in a manner which gives some incentive for pioneers to invest in development and deployment of equipment in this unused portion of the radio spectrum. Specifically we would request that :

- Licenses for systems utilising paired blocks of up to 2 x 500 MHz are made available, without restrictions as to the type of modulation schemes or link lengths that can be used .
- The license fees should be set a level sufficient only to cover Ofcom's administrative costs for at least the first 7 years of opening the band. The per-link fees should also be renewable on a 5 year basis (rather than annual) to reduce administrative costs. These low fees would help to promote investment in the band.
- Ofcom should, to the extent practicable, avoid assigning more than one operator in the same portions of the band in the early years so that pioneering operators can have greater confidence in the continued availability of spectrum in a given part of the band. Any subsequent auction of the band with (incumbent pioneer users) would also be simplified for Ofcom, as well as for the pioneers who may wish to purchase the part of the band that they are using outright.

4). Do stakeholders have any other comments on the contents of this document?

BT notes that, in section A6.7 of the consultation document, a range of possible modulation scheme levels and system bandwidths are mentioned. In that section it states that the systems could use "QPSK through to 64/128QAM". BT is unsure why other possibilities are being excluded by Ofcom as in some bands it might be necessary to use, for example, 2FSK or 256QAM/512QAM. In line with Ofcom's technology neutrality principles we would suggest that the list of possible systems is broadened or it is made clear that the systems mentioned are just examples. Concerning bandwidths, BT believes that licence holders should be permitted to select bandwidths appropriate to cater for traffic and modulation.

3. CONCLUSIONS

BT generally supports the Ofcom proposals for the award of the unused spectrum at 10 GHz, 28 GHz and 32 GHz. We would wish to better understand the interference risks at 10 GHz and to see the Interface Regulations for these bands. BT believes that in order to support innovation the 40 GHz band should be made available as part of the same award process as the other three bands.

We are of course available to discuss the points raised in this response in more detail with Ofcom if required.

4. REFERENCES

- [1] Spectrum Framework Review : Implementation Plan– Interim Statement, Ofcom, 28 July 2005

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