



**Vodafone's response to Ofcom's consultation**  
**"Review of the Spectrum Management Approach in the**  
**71-76 GHz and 81-86 GHz bands"**

**Oct 2013**

**Non-confidential version**

## **SUMMARY AND CONCLUSIONS**

Vodafone welcomes the opportunity to comment on Ofcom's proposals for the future management of the 71-76 GHz and 81-86GHz bands (commonly known as "e-band"). We have been an active contributor to the activity to formulate these proposals, and as such are satisfied that our spectrum needs have been addressed.

We believe that the approach of splitting the bands to allow part of it to continue to be self-coordinated, and part to be Ofcom-coordinated, represents a fair approach to meet all stakeholder needs. Further, we support the proposal of a downstream review to determine whether the correct segmentation has been made.

Vodafone considers the charges proposed for the Ofcom coordinated section are an expedient and pragmatic approach. Although we believe the proposed pricing to be *broadly* reflective of the economic worth of the spectrum, we have some reservations about the approach adopted in deriving the fees from those set for lower frequency spectrum. Further, we have some reservations that these prices are necessarily to be applied only on an interim basis. The network deployment decisions we must take are for the long term, and to make such decisions future pricing certainty is essential. While pricing remains on an interim basis, our deployment will inevitably be constrained, lest Ofcom subsequently adopts a pricing policy that makes their usage uneconomic and leaves us with significant stranded assets. Therefore, we would urge that long term pricing is put in place as soon as possible, and that this should be in line with the interim pricing levels.

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## **ANSWERS TO QUESTIONS**

*Question 1: Do you have any additional information to provide to that presented in this consultation that you believe Ofcom should consider? If so please provide clearly evidenced views. Are there any other issues that you believe Ofcom should have considered?*

Vodafone has contributed fully to the stakeholder engagement exercise described in Section 4 of the consultation. As such, we are comfortable that Ofcom has taken into account the background information that we have already provided.

*Question 2:*

*a) Do you agree with our proposals to offer a mixed solution that allows stakeholders to choose between the currently available self coordinated authorisation approach and a new Ofcom coordinated approach for the band?*

*b) Do you agree with the segmented band plan with the split of 2 x 2 GHz and 2 x 2.5 GHz for Ofcom coordinated and self coordinated approaches respectively?*

*c) Is the guard band size of 250 MHz considered appropriate between the two approaches?*

Vodafone agrees with Ofcom's proposal to adopt a segmented approach. We do not consider that a self-coordinated approach provides the technical certainty to provide backhaul for commercial service, but at the same time acknowledge that there are applications utilising the band that would be ill-served by an Ofcom-coordinated approach. Therefore, it appears pragmatic to segment the band between Ofcom- and self-coordinated administration. 250MHz is an appropriate guard band between the two approaches.

Time will tell whether Ofcom's segmentation based upon 2x2GHz for Ofcom coordinated and 2x2.5GHz for self-coordinated is correct. However, Vodafone considers that these represent a good starting point, and sensible measures have been put in place to allow flexing of the bands, should the initial estimates prove to be wrong.

We would caution, however, that any future review only occurs after a sufficiently long period to allow the system to bed-in, and in particular for mobile network rollout to occur. Ofcom will not see a bow wave of applications for e-band links for mobile backhaul: rather, there will be a gradual build-up as mobile operators deploy their 4G networks. Further, "industrial-scale" usage of the Ofcom coordinated band will not truly happen until there is pricing certainty (see our response to Q.3). Therefore, Vodafone suggests that any review shouldn't occur for at least three years.

*Question 3:*

*a) For the Ofcom coordinated part of the band, do you agree with the proposal to make available channels of 500 MHz and 250 MHz (with smaller channels being made available when the standards are completed) and to make these channels available in up to 1 GHz bandwidth in the first instance?*

*b) Is there a requirement for channel sizes greater than 500 MHz in the coordinated block? Please submit evidence to support your view.*

Vodafone agrees the proposal to initially utilise the bottom 1GHz of the band, making it available in 250MHz and 500MHz channels. Although we would not rule out future usage of channel sizes greater than 500MHz, at this stage we do not have a need for such sizes and consider that the issue could be addressed by subsequent consultation as necessary.

Vodafone notes the proposed pricing. We understand the difficulty faced by Ofcom in setting pricing in advance of the Fixed Link Fee Review, and consider the proposed approach to interim pricing to be a pragmatic solution to get the Ofcom coordinated band into service. In setting the fee, there is a need to look both at the costs incurred by Ofcom and the incentives for potential assignees to use the coordinated e-band frequencies versus other technical solutions. In particular, notwithstanding Vodafone's reservations about using self-coordinated spectrum, if the price premium of Ofcom coordination was significant, this would drive operators to make a risk assessment about using the higher band.

Vodafone is not fundamentally opposed to the Ofcom coordinated band being charged on an AIP basis, so long as the AIP algorithm is reflective of the alternative demand for that spectrum band : it is clear that there is limited alternative demand for e-band usage hence the premium over a simple administration fee should similarly be limited. As outlined in our response to Q2, it is essential that industry is given long term certainty via the Fixed Link Fee Review as soon as possible.

It is clear from paragraphs 5.56 and 5.57 that the proposed fees for the Ofcom coordinated segment are derived from the fees in the 38GHz band, which are set on an AIP basis, and varied by link size. However, Vodafone believes that Ofcom may have erred in the execution of this approach by not applying a band factor which discounts the fee with reference to the nature of radio propagation. Given that the factor employed in the Ofcom reference band 38GHz is 0.26, and in the 50-55GHz bands it is 0.17, this suggests that for the purposes of interim fee setting a discount of at least 50% between the 38GHz band and the 70/80GHz band should be applied for this factor alone, putting aside any other considerations. For this reason we would suggest a 50% discount be applied to the rates that Ofcom has suggested in paragraph 5.59 and 5.61.

We note the considerable ramp up in existing licenses that has occurred over the last year, and in combination with Ofcom's analysis of current usage, deduce that many of these could have been for mobile backhaul purposes. Should these allocations fall within what will become the Ofcom coordinated band, and clearly be for mobile backhaul usage, then Ofcom should retrospectively apply the charging regime. Absent this, the licensees will benefit from the lower chance of interference yielded by Ofcom coordination, but not have to pay the associated fees.

*Question 4:*

- a) Are there any aspects of the current self coordinated licensing and link registration process that could benefit from improvements? Please provide specific information and reasons for how your suggestions would improve the process.*
- b) Should Ofcom consider mandating the CEPT channel plan, ECC/REC/(05)07 for the self coordinated block? Explain clearly the reasons to support your view.*
- c) Are the technical parameters shown on the register sufficient to enable self coordination? Should Ofcom consider presenting additional parameters on the register? If so, which parameters and why?*

Vodafone has no specific observations to make on the technical parameters set out in the consultation.

**Vodafone Limited**  
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