Vodafone response to Ofcom consultation:

Protecting passive services at 23.6-24 GHz from future 26 GHz uses

Protecting passive services

Vodafone welcomes the opportunity to comment on Ofcom's proposals to protect adjacent passive services, as part of the preparation to award spectrum in the 26GHz band.

5G has the potential to transform UK communications services, and we believe that the deployment of mm-wave spectrum has a role to play in meeting consumer and enterprise demand. We believe that it is important that 5G services do not interfere with the operation of adjacent users. Given the scare stories that are perpetuated around 5G deployment, we believe it is also important that expert analysis demonstrates that risks to adjacent users have been mitigated. Against this backdrop, we welcome the level of technical rigour that Ofcom has shown in the coexistence analysis in the consultation.

Whilst not professing to have expertise in the radio astronomy or passive earth exploration satellite fields which are the subject of this consultation, the coexistence analysis seems rigorous and reasonable to Vodafone.

We are comfortable with the exclusion zones that are proposed for the six radio astronomy sites.

We believe the restriction on the volume of deployments proposed to protect earth exploration satellites is justified by the analysis. However, we note that the restrictions, which on the basis of 200MHz channels would mean no more than 1100 sectors in a square of 11 miles by 11 miles, could lead to practical rather than merely theoretical limitations at the bottom of the band in some geographies. At this point the issue then becomes somewhat intertwined with the award mechanism that Ofcom has in mind for the band, which we understand will be the topic of further consultation over coming months:

- If Ofcom adopts an approach of awarding national licences, then any licences which cover 24.25-25.05GHz will have impaired value, and any licensee of those frequencies will be at a disadvantage to licensees further up the band.
- If, however, Ofcom adopts the ideas put forward by UK Spectrum Policy Forum[1], then there is scope for the bottom part of the band to be dedicated to light licensing nationally, with only the upper part of the band (up to 2.45GHz) awarded for exclusive licences in the "high usage" areas. Adopting this approach, Ofcom would then be able to closely monitor the volume of deployments in the 24.25-25.05GHz frequencies which are of concern.

[1] https://www.techuk.org/resource/a-new-approach-to-spectrum-licensing-the-26-ghz-band.html

Answers to questions

Question 1

For future outdoor use of 26 GHz, do you agree that the proposed exclusion zones will provide appropriate protection to the 6 radio astronomy sites? If not please explain your reasons for this providing any supporting evidence.

Vodafone agrees with Ofcom's analysis.

Question 2

For indoor use of 26 GHz, do you agree that additional measures are not needed to protect radio astronomy sites and that we should remove the existing 1 km exclusion zone around Jodrell Bank and Cambridge from the current 26 GHz indoor-only shared access licence product? If not, please explain your reasons for this providing any supporting evidence

Vodafone agrees with Ofcom's analysis. In general, there needs to be clarity around what constitutes indoor usage so there are no grey areas around, for example, stadia, but we do not believe that this is of any practicable importance for the specific sites that are quoted.

Question 3

Do you agree with our proposal to limit the number of 26 GHz base stations in 24.25-25.05 GHz to protect EESS (passive) use at 24 GHz? If not, please explain your reasons for this providing detailed supporting evidence.

Vodafone agrees with Ofcom's analysis. On the whole, this restriction should not present a practicable limitation on 5G mm-wave deployment, but in some specific geographies it may do so. For this reason, we believe that Ofcom should take this restriction into account when considering the award process.

Question 4

Do you agree with the technical analysis set out in Annex 2? If not, please explain your reasons for this providing detailed supporting evidence.

Whilst we would not assert any great expertise in the fields of radio astronomy and earth exploration satellites, the analysis appears rigorous.

Vodafone UK

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