Virgin Media O2 response to Ofcom's consultation:

Supporting increased use of shared spectrum:

A consultation on proposals to enhance our Shared Access framework to support a growing variety of spectrum users

February 2024

INTRODUCTION

Virgin Media O2 ("VMO2") welcomes the opportunity to respond to Ofcom's consultation on Supporting increased use of shared spectrum.[1] Our response is in two parts. The first part, our Main Response, provides our views on the scope of Ofcom's review, with a focus on the 3.8 – 4.2 GHz band. The second part addresses Ofcom's specific questions.

MAIN RESPONSE

We wish to reiterate our view, as stated in our response to Ofcom's Call for input on Evolution of the Shared Access Licence Framework[2], that Ofcom should ensure the scope of its review is sufficiently broad and include an assessment of whether there may be demand for alternative uses of spectrum currently set aside for shared use, that could deliver greater economic and societal benefit.

In this regard, whilst we support Ofcom's proposals to remove the requirement for users to maintain certain records for mobile terminals connected to Low Power indoor base stations in the 3.8-4.2 GHz band, to enable more neutral host in-building solutions, and its proposal to increase the power level by 3dBm, we are however disappointed that at 7.10 in the consultation, Ofcom states:

> *"…the continuing need to give effect to our broader intentions for 3.8-4.2 GHz not to be used for wide area mobile coverage networks…".*

The 3.8-4.2 GHz band has the potential to act as an important resource for existing MNOs, as well as new users. It represents 390 MHz of prime mid-band spectrum, which Ofcom has set aside for lower power shared use, which is, in general, lightly used. Artificially restricting spectrum rights such as power in this way, can reduce the value of the spectrum and foreclose alternative opportunities, such as high-power public mobile use, which could deliver significant benefits.

In our response to Ofcom's Call for input, we highlighted a report on The Impact of Spectrum Set-Asides on 5G by Aetha Consulting, prepared for the GSMA[3]. The report analyses potential approaches available to regulators for providing access to spectrum for private network use. Through five country case studies, including the UK, it identifies the wider impact of these approaches, especially on mobile markets. It notes that:

> *"Making spectrum available for industry users has to be balanced against demand from other users, including mobile operators who have increased spectrum needs as mobile data traffic grows. As a result, the benefits that regulators expect from an assignment of IMT spectrum to private or local networks have to be carefully weighed against the cost resulting from potentially denying other users access to the same resources."*

[1] https://www.ofcom.org.uk/__data/assets/pdf_file/0017/272051/Consultation-Shared-Access-Licence.pdf

[2] Virgin Media O2 response to: Evolution of the Shared Access Licence Framework: Call for Input, Ofcom, March 2023. https://www.ofcom.org.uk/__data/assets/pdf_file/0032/255965/call-for-inputs-evolution-of-shared-access.pdf

[3] https://www.gsma.com/spectrum/wp-content/uploads/2023/02/Impact-of-Spectrum-Set-Asides-on-5G.pdf

In relation to the UK, the report states:

> *"…Ofcom made available over 400 MHz for a variety of local use cases through shared access licences. Most licences to date are held by a limited set of users and are only for a fraction of the available bandwidth. While 5G use cases are still emerging, initial take-up thus suggests Ofcom set aside more of the 3.8 – 4.2 GHz band than necessary to support local users."*

VMO2 agrees with this observation.

As we highlighted to Ofcom in our response to its Call for input, MNOs have forecasted that between the period 2025 and 2030, existing capacity will become exhausted on a significant number of sites and so face an upcoming challenge in respect of their ability to meet demand, especially in dense urban areas. In response to this demand, MNOs plan to densify their networks as a way of increasing capacity in key areas. However, densification has practical and economic limits. Additional mid-band spectrum is the only viable solution for MNOs to meet demand and provide the highest quality mobile services across wide areas. This will be especially important where the deployment of mmWave spectrum will not be technically suitable, or economically viable.

We believe that Ofcom can go further in its review, to assess the feasibility of enabling more valuable opportunities in the 3.8-4.2 GHz band, for example, by reducing the amount of spectrum that is currently set aside for lower-power use and enable high-power public mobile use in the band in areas where it will be most needed. This would help MNOs to meet future demand and deliver the highest quality mobile services over wide areas, leading to greater benefits and securing optimal use of the spectrum.

The remainder of our response focusses on Ofcom's specific questions.

RESPONSE TO SPECIFIC QUESTIONS

Question 1: Do you have any comments on our proposals to gather additional antenna parameters, and would you prefer Ofcom to specify a small number of antenna pattern 'envelopes' or for users to provide details of the specific antenna parameters in use for Ofcom to assess? Please provide reasons for your views.

We support Ofcom's proposal to gather additional antenna parameters. Our preference is for Ofcom to request users provide details of the specific antenna parameters they plan to use at the application stage, and Ofcom use this information to build a library of real-world antenna parameters. As Ofcom highlights, this approach is likely to produce more realistic results.

Question 2: Do you have comments on the suggested approach to enable user-led coordination in certain circumstances?

We support the suggested approach to introduce the option for user-led coordination in certain circumstances. Such an approach could help to facilitate improved efficiency in the use of the spectrum.

Question 3: Do you have any comments on our proposal to increase the power level of our Low Power product by 3dBm in the 3.8-4.2 GHz band?

We support Ofcom's proposal to increase the power level of the Low Power product by 3dBm in the 3.8-4.2 GHz band. As Ofcom highlights, this increase in power can be useful to unlock opportunities, especially in certain urban indoor environments where mobile coverage may be improved.

Question 4 Do you have any comments on our proposal to remove the requirement for licensees holding a Low Power 3.8-4.2 GHz licence to keep a record of the address at which mobile terminals connected to an indoor base station will be used?

We support Ofcom's proposal to remove the requirement for licensees holding a Low Power 3.8-4.2 GHz licence to keep a record of the address at which mobile terminals connected to an indoor base station will be used. Removal of the requirement can assist with enabling neutral host solutions to be deployed to provide indoor mobile coverage in certain places where it either does not exist today, or can be improved.

Question 5: Do you agree with our proposals to assume synchronisation between users, and coordinate base station to terminal instead of base station to base station in the 3.8-4.2GHz band? If no, please explain how other measures could increase sharing of the band.

Yes. We agree with Ofcom's proposals to assume synchronisation between users, and coordinate base station to terminal instead of base station to base station in the 3.8-4.2 GHz band. We believe it is important that base stations are synchronised and align to a default frame format. A future where all indoor shared spectrum is collectively synchronised will result in more efficient use of the spectrum.

Question 6. Please indicate whether you support our preferred option of coordination at -88 dBm/20 MHz (based on I/N of + 3dB, at 1.5m) or a more conservative alternative of -91 dBm/20 MHz (based on I/N of 0dB at 3m), with reasons for your view.

We have no strong view, but would support the preferred option of coordination at -88 dBm/20 MHz (based on I/N of + 3dB, at 1.5m).

Question 7: Do you agree with our proposals for an increase in BEL in 3.8-4.2GHz? If no, are there alternatives which you consider could better achieve similar results?

Yes.

Question 8: Do you agree with our proposal that adjacent band protection for Shared Access users is in future limited to considering only the first 5 MHz above and below UK Broadband assignments?

We have no comments.

Question 9: Do you agree with our assessment that, in circumstances where localised shortages of spectrum have occurred, pricing can be used to influence requested spectrum amounts?

Yes, it is feasible that it could be used to influence requested spectrum amounts.

Question 10: Do you agree that we should take measures to reflect the impact of bandwidth, power levels and urban/rural location in our pricing approach for the 3.8- 4.2 GHz band? Do you think there are other factors we should be taking into account?

Some measures may be appropriate in certain circumstances, however there is a risk of unintended consequences. For example, significant price increases may impact the business case for, and therefore disincentivise the deployment of, solutions aimed and improving mobile coverage. See our response to Question 11 for further explanation. See also our Main Response for our views on the opportunity to enable high-power public mobile use in the band.

Question 11: How do you consider the illustrative prices would impact your spectrum requirements and future deployment plans in the 3.8-4.2 GHz band? Please provide evidence in support of your view.

Given Ofcom's proposals to remove the requirement for users to maintain certain records for mobile terminals connected to Low Power indoor base stations, to enable more neutral host style solutions, and its proposal to increase the power level by 3dBm to support wider coverage and lessen deployment challenges, we believe that significantly increasing the price of the urban low power fees (for example, in the case of 100 MHz, doubling the fee) sends the wrong signal and could act as a disincentive to enabling more neutral host style solutions, thereby limiting potential mobile coverage improvement opportunities.

Question 12: Do you have any comments on our proposals to clarify the circumstances in which exceptions are available, the tests we will apply, and how this supports user flexibility outside our overarching rules?

We have no comments.

Question 13: Do you agree with our overall approach based around refining our existing coordination framework for Shared Access, whilst monitoring future opportunities for more user led and outcomes led coordination where evidence suggests it would be of benefit?

Yes, within the existing scope of the current consultation, we agree with the approach around refining the coordination framework, whilst monitoring future opportunities for more user led and outcomes led coordination, where evidence suggest it would be of benefit. However, see also our Main Response for our wider views on the opportunity to enable high-power public mobile use in the 3.8-4.2 GHz band.

Question 14: Do you agree with our assessment of the potential impact on specific groups of persons?

We have no comments.

Question 15: Do you agree with our assessment of the potential impact of our proposal on the Welsh language? Do you think our proposal could be formulated or revised to ensure, or increase, positive effects, or reduce/eliminate any negative effects, on opportunities to use the Welsh language and treating the Welsh language no less favourably than English?

We have no comments.

Question 16: Do you have any other comments on the proposals set out in this document?

We have no further comments.