Virgin Media O2 response to Ofcom Call for Input on:

Evolution of the Shared Access Licence Framework

May 2023

MAIN RESPONSE

Virgin Media O2 ("VMO2") welcomes the opportunity to respond to Ofcom's Call for Input on Evolution of the Shared Access Licence Framework[1]. We agree with Ofcom that it is approaching the point in time at which a review of its original proposals is appropriate. We also welcome Ofcom's recognition of the need to keep its authorisation tools constantly under review to ensure its processes remain suitable to meet evolving demand.

We observe that demand from new users for Shared Access Licence spectrum under the framework has, to date, been modest, and much of the spectrum is relatively lightly used. Whilst more than 1600 licences have been issued across 4 bands, just under half of those are legacy DECT guard band licences (authorising use of 2 x 3.3 MHz of spectrum at 1781.7-1785 MHz, paired with 1876.7-1880 MHz) which existed prior to Ofcom's introduction of the Shared Access licence framework in 2019.

As part of its review, Ofcom should take a step back and examine whether there are alternative use cases for specific spectrum bands that are currently set aside under the framework, that could deliver greater economic benefit over the medium to long term. For example, the 3.8 – 4.2 GHz band has the potential to act as an important resource for existing MNOs, as well as new users. We believe there could be an opportunity to support alternative use cases in this band, i.e. high-power public mobile use, that could deliver greater economic benefit and ensure optimal use of the spectrum over the medium to long term.

Ofcom's review should also consider whether or not its current sharing framework is sufficiently multi-directional. Whilst spectrum sharing opportunities for new users have been enabled e.g. though providing access to a large block of prime mid-band spectrum in the 3.8 – 4.2 GHz band, opportunities for Mobile Network Operators ("MNOs") to share or otherwise gain access to such mid-band spectrum for high-power public mobile use, do not appear to have been properly examined, nor progressed.

In light of this, we urge Ofcom to ensure that the scope of its review is sufficiently broad. It should include an assessment of whether there may be growing demand for alternative uses of spectrum currently set aside for shared access use, that could deliver greater economic benefit over the medium to long term.

Ofcom must also ensure that it retains enough flexibility to enable it to respond to future changes in market circumstances in an agile manner. For example, to reduce the amount of spectrum that is currently set aside for only low or medium-power use, and to enable high-power public mobile use, in order to help meet future demand for mobile data.

We wish to highlight a recent report on The Impact of Spectrum Set-Asides on 5G by Aetha Consulting, prepared for the GSMA[2], which analyses potential approaches available to regulators for providing

[1] https://www.ofcom.org.uk/__data/assets/pdf_file/0032/255965/call-for-inputs-evolution-of-shared-access.pdf

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

access to spectrum for private network use. Through five country case studies, including the UK, it demonstrates 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."*

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. The report also notes:

> *"By moving local demand to the 3.8 – 4.2GHz range, Ofcom has ensured that UK operators have access to 390 MHz of spectrum in the 3500 MHz band, which has enabled 5G rollouts with good median downlink speeds compared to other European countries, according to Ookla."*

VMO2 also agrees with this observation. However, alongside this, the report also states:

> *"At the same time, Ofcom has retained the option to revoke shared access licences in case it foresees a better use of the band. This flexibility is important to be able to react to situations where market demand and technology trends evolve, e.g. where there is increasing demand for further mobile capacity, e.g. in the 3.8 – 4.2 GHz band. At that point, it may be most economically efficient to return towards a more traditional model of exclusive nationwide licences for mobile operators – an approach that has served the UK well in the past."*

VMO2 strongly agrees with this statement. As we have set out in our responses to various Ofcom publications on spectrum matters in recent years, including last year's discussion paper on 'Mobile networks and spectrum: Meeting future demand for mobile data', we believe that the 3.8 - 4.2 GHz band has strong potential for high-power public mobile use. As such, Ofcom should actively explore the potential of re-purposing and release, or sharing of, spectrum bands such as 3.8 – 4.2 GHz that may be underutilised and which, in future, could be used to deliver greater value.

Whilst existing sharing opportunities currently exist, they only provide benefit at the margin. Ofcom's spectrum sharing framework is essentially an experiment. As with any experiment it is important to review the results and draw conclusions. In that regard, we believe that Ofcom should carefully monitor and evaluate take up of the spectrum within the framework, and ensure that it retains

sufficient flexibility to enable it to remain agile and that it actively explores the potential benefits of alternative use cases.

As part of the review, Ofcom also should set out its view of what conditions have to be present for it to consider that the sharing framework, has or hasn't, been a success e.g. number of licences issued by a certain date. In the near term, whilst the shared licensing experiment continues, we believe Ofcom should carry out scoping work to assess the feasibility of alternative uses including high-power public mobile use, which could be enabled in the 3.8 – 4.2 GHz band, through conducting a cost-benefit analysis for such use and/or examination of potential spectrum sharing co-ordination mechanisms.

Ofcom should be mindful that spectrum rights that are artificially restricted by aspects such as power, can foreclose alternative sharing opportunities, reducing the value of spectrum and resulting in sub-optimal use. Sharing mechanisms should therefore seek to ensure compatibility with high-power use, for example through use of databases that can be used to manage co-existence between sharers and maximise efficiency. In this respect, we welcome Ofcom's publication alongside this Call for Input, of a discussion paper on Opportunities for dynamic or adaptive approaches to managing spectrum in the UK[3], and its engagement on exploring such approaches to facilitate more sharing of valuable bands. This includes spectrum currently used by the Ministry of Defence, such as the lower 2.3 GHz band, which we think could be better utilised by enabling high-power public mobile use, given that it is harmonised for such use and there is an appropriate ecosystem involving equipment and devices.

VMO2 wish to be clear about the wider context in which we set out our views in respect of the current Shared Access licence framework. That is, as we have stated in our responses to various Ofcom publications on spectrum matters[4], over the coming years, existing spectrum for public mobile use will become quickly absorbed by the well-evidenced continued growth in demand for mobile data, fuelled by increased adoption of 5G and greater usage of existing services, as well as newly developed ones. We anticipate annual traffic growth to persist along the lines that we have experienced on our network in the most recent years, and within the bounds of Ofcom's own published forecasts. Growth rates of this magnitude mean that total traffic more than doubles every three years. This is something that is not just evident in the UK, but has also been seen across Europe, as customers demand for mobile connectivity and services remains strong.

MNOs have forecasted that between the period 2025 and 2030, existing capacity will become exhausted on a significant number of their sites. MNOs therefore face a future 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. MNOs will not be practically able to, nor could commercially justify, densification on the scale required to meet demand and deliver high-quality services, across all areas. The availability and deployment of a sufficient amount additional mid-band spectrum is the only viable solution for MNOs to meet demand and provide the highest quality mobile services across wide areas

[3] https://www.ofcom.org.uk/__data/assets/pdf_file/0032/255956/discussion-paper-flexible-adaptive-spectrum.pdf

[4] For example, VMO2 response to Ofcom Call For Input on UK Preparations for the Word Radiocommunication Conference 2023 (WRC-23): UK Provisional views and positions for WRC-23

and will be especially important to enable delivery of services where the deployment of mmWave spectrum will not be technically suitable, or economically viable.

The absence of timely access to sufficient mid-band spectrum for high-power public mobile use is likely to have a detrimental impact upon UK consumers and businesses, who currently enjoy good speeds and, as Ofcom report, display high levels of satisfaction[5]. It would mean that MNOs would either be forced to densify their networks to such an extent to provide the capacity to meet demand, that the cost of doing so would be so great that it would impact the use of 5G technology, and/or need to be recouped by being passed on to customers through an increase in prices. Alternatively, without the required spectrum or very costly densification, operators would have to accept a level of reduction in capacity, resulting in congestion and degradation of service, again impacting customers, and causing detriment. This would represent a failure to deliver the level of ambition and services that the UK will expect and leave it at a disadvantage relative to countries which prioritise spectrum allocation to high-power public mobile use.

VMO2 is concerned that Ofcom currently has no clear roadmap for the provision of any such suitably large block of mid-band spectrum. This is evidenced by the fact that Ofcom's current Spectrum Roadmap, which was last updated in November 2022[6], does not contain any specific work items or timelines for release of sufficient mid-band spectrum for future mobile use, for example the upper 6 GHz band, nor any commitment by Ofcom to seek to achieve International harmonisation of such an important band.

As a result, we believe Ofcom should give careful consideration to the future repurposing and/or release of any key spectrum bands that are currently underutilised and which could be used to deliver greater benefit over the medium to long term, i.e. the 3.8 - 4.2 GHz band. Ofcom should provide a commitment and clear work items, to undertake an assessment of any costs and benefits of future repurposing and/or release, to ensure that actions are proportionate.

Ofcom should avoid prioritising work aimed to stimulate opportunistic access to key spectrum which only delivers benefit at the margin, and could prevent the enablement of greater medium and longer-term value. Instead, we encourage Ofcom to take a more holistic approach. This should involve conducting a full and proper assessment, with a focus on maximising long term benefit and value. VMO2 believe this approach is key to ensuring that Ofcom secures optimal use of the spectrum and maximises benefits to UK consumers and businesses.

[5] For example, in Ofcom's recent Comparing Customer Service publication, https://www.ofcom.org.uk/__data/assets/pdf_file/0014/261500/comparing-customer-service-report-2023.pdf

[6] https://www.ofcom.org.uk/__data/assets/pdf_file/0025/247183/statement-spectrum-roadmap.pdf

RESPONSE TO SPECIFIC QUESTIONS

1. How do you think demand for Shared Access is likely to change in future and why; Which use cases do you think are likely to emerge or grow, and which decline? Please provide a view on the bandwidth you would consider the minimum and optimal requirement for growth use cases, and timelines you would expect for their development.

No comments.

2. Are there elements of the current framework that complicate the use of Shared Access licences for specific use cases? If so, please provide specific examples and indicate the changes that would be required to facilitate this and how this might co-exist with other use cases.

No comments.

3. Do you have any comments on the power restrictions currently in place, particularly in urban/high density areas, under the Shared Access licence? Please explain what benefits could be delivered using a higher operating power (e.g. medium power in urban areas), or any concerns you sharing with such operations).

Ofcom should be mindful that spectrum rights that are artificially restricted by aspects such as power, can foreclose alternative sharing opportunities, reducing the value of spectrum and resulting in sub-optimal use. Sharing mechanisms should therefore seek to ensure compatibility with high-power use, for example through use of databases that can be used to manage co-existence between sharers and maximise efficiency. Ofcom should carry out scoping work to assess the feasibility of high-power use, which could be enabled in the 3.8 – 4.2 GHz band, through conducting a cost-benefit analysis for such use and/or examination of potential spectrum sharing co-ordination mechanisms. Future access to a sufficiently large block of mid-band spectrum for high power public mobile use would deliver significant benefits by providing much needed capacity, mitigating congestion in key areas and enabling the full suite of 5G use cases in an economically viable way. It will be especially important to enable delivery of services where the deployment of mmWave spectrum operating at low or medium power, will not be technically suitable, or economically viable.

4. Do you have any comments on the exceptions process, and how some of its benefits could be maintained within more standardised and automated assessments?

No comments.

5. Do you have any views whether and how the coordination approach should be modified? If yes, please provide comments in light of the issues set out above.

No comments.

6. Do you have views on whether newer or emerging technologies can support coexistence between additional users in the band, and if so, how?

Databases could be used to manage co-existence between sharers and maximise efficiency.

7. Please outline any comments on the current licensing process (e.g. ease of application, time taken, the information we require). If relevant, please note aspects you are currently content with and areas which could be improved.

No comments.

8. Do you have any comments on the suitability of available spectrum for your use cases? Please consider the relevance of the additional bands we are proposing for the framework, and the impact of any limitations on existing bands.

Please see the Main Response for our views on the need for suitable additional mid-band spectrum for high-power public mobile use to meet the continued growth in demand that is expected over the coming years.

9. Do you have any comments on equipment availability limiting deployment options in 3.8-4.2 GHz? Please comment on the impact of any experiences you have had, and where relevant, your expectations for when more equipment will be broadly available across the band.

No comments.

10. Do you have any other general comments on the Shared Access framework? Please consider any areas where future innovations could further support Ofcom's policy objectives for this spectrum, and/or improve the experience for users.

We urge Ofcom to ensure that the scope of its review of the Shared Access licence framework is sufficiently broad. It should include an assessment of whether there may be demand for alternative uses of spectrum currently set aside for shared access use, that could deliver greater economic and societal benefit. In addition, Ofcom must ensure that it retains enough flexibility to enable it to respond to changes in market circumstances in an agile manner. For example, to reduce the amount of spectrum that is currently set aside for only low or medium-power use, and to enable high-power public mobile use in order to help meet future demand for mobile data.