



Virgin Media O2 response to Ofcom consultation:

Future use of 2 GHz MSS

Proposals for the use of 1980 – 2010 MHz and 2170 – 2200 MHz from
May 2027

September 2026

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INTRODUCTION

Virgin Media O2 (“VMO2”) welcomes the opportunity to respond to Ofcom’s consultation on Future use of 2 GHz MSS: Proposals for the use of 1980 - 2010 MHz and 2170 – 2200 MHz from May 2027¹.

The 2 GHz MSS band has the potential to enable, and enhance, a range of services that can deliver significant benefits for the UK. It is therefore important that Ofcom’s regulatory framework, and its approach to authorising use of the spectrum, can support the delivery of these benefits, seeks to avoid harmful interference, and is suitably flexible to enable Ofcom to adapt to the fast-changing market, and developments at the European and International level.

GENERAL COMMENTS

VMO2 believes that a long-term successful outcome for the 2 GHz MSS band is more likely to be achieved if Ofcom closely follows its legal duties to promote competition and secure optimal use of spectrum. Ofcom should also pay close regard to important factors including encouraging innovation and investment, spectrum efficiency, and avoiding fragmentation.

Ofcom should seek to align, to the extent possible, with activities in Europe in relation to the future of the band. Europe-wide harmonisation is critically important to provide the certainty required for investment and to create an ecosystem that will support economies of scale for equipment, enable the efficient delivery of services, and minimise the risk of cross-border interference.

Satellite and mobile services are evolving fast, and there are regulatory aspects beyond just coexistence that Ofcom should take into account when developing its framework. As complementary services could be delivered by Mobile Network Operators (“MNOs”) and Satellite Network Operators (“SNOs”), they should be subject to the same rules.

Ofcom should ensure that its framework for the band is appropriately designed so that it cannot be unfairly gamed or used to restrict competition, and that it delivers a level playing field. VMO2 observes that the regulatory position of existing 2 GHz MSS licensees differs significantly from UK MNOs, including with respect to spectrum fees, security and resilience obligations, and consumer protection measures. In developing its framework, Ofcom should seek to address current regulatory imbalances to avoid the distortion of commercial incentives and support fair market competition into the long term.

¹ [Consultation - Future use of 2GHz MSS](#)

VMO2 supports Ofcom's proposed approach to extend existing 2 GHz MSS licences for a transitional period, while a longer-term framework for the band is developed. We believe this strikes the right balance between providing certainty for incumbents in the near term, whilst also allowing time for the market, technology, and wider regulatory policy to develop, before key decisions are made on the long-term future of the band.

We agree that a three-year transition period is an appropriate timeframe. As the market is developing fast, when compared to a longer period of five years, a three-year period provides greater flexibility for Ofcom to respond to rapidly evolving technologies, emerging business models, and wider developments at the European and International level.

The proposed interim extension is a pragmatic approach that will preserve market stability, whilst avoiding premature, and major changes to the licensing regime, and at the same time will enable Ofcom to track key developments including CEPT, EU level activity, the outcomes of WRC-27, the evolution of 3GPP NTN standards, and the maturity of the emerging D2D ecosystem.

Looking beyond the transition period, we expect the competitive landscape to evolve significantly. Existing MSS operators are investing in 5G NTN capabilities, while companies such as AST SpaceMobile, SpaceX, Skylo, Omnispace, and others, continue to develop D2D and IoT-focused services. Decisions on the long term future of the band should therefore be informed by the development of these ecosystems, evidence of market demand, the promotion of competition, efficient use of spectrum, and supporting the UK's broader industrial strategy.

D2D satellite services would particularly benefit from access to 2 GHz MSS spectrum, at the right time. Existing D2D deployments that utilise licensed mobile spectrum (such as O2 Satellite), have already established themselves as an important new layer of connectivity, supplementing terrestrial mobile networks by infilling not-spots, improving outdoor coverage, and providing basic connectivity with access to messaging and critical apps and services, as well as providing an element of resilience.

D2D services are expected to evolve rapidly, driven by the migration to next generation Satellites, utilisation of the latest technologies, and access to additional spectrum, all of which can support the delivery of enhanced service offerings and improved capability and quality. 2 GHz MSS spectrum can play a key role in enabling a step-change in D2D service performance to deliver further benefits for the UK and unlock true Terrestrial Network and Non-Terrestrial Network ("TN-NTN") integration.

If implemented appropriately, future access to 2 GHz MSS spectrum for D2D services in the UK could help to mitigate the existing impact to coverage and quality across some areas of the UK, which arise from the strict power limits currently in place for D2D services using

licensed mobile spectrum, which are aimed at minimising the risk of cross-border interference with co-channel services in nearby territories.

When making decisions on the future of the band, we urge Ofcom to be mindful of existing D2D services such as O2 Satellite. Ofcom should seek to avoid harmful interference, whilst employing an efficient approach which aims to maximise service availability and does not result in restrictions that would negatively impact coverage or service quality and cause detriment to end users of the service.

In summary, VMO2 believes that Ofcom should proceed with the proposed transitional extension, whilst undertaking a considered and comprehensive review of the long-term future use of the band in light of evolving regulatory frameworks, technology standards, market developments, and outcomes at WRC-27. The UK should seek to align with the EU, to the extent possible, to ensure it can capitalise on the substantial benefits that harmonisation will bring. Ofcom should aim to develop and enable a framework for the band that promotes competition, innovation, efficient use of spectrum, and avoid harmful interference, to provide the best chance of long-term success for the band and deliver the best possible outcomes for the UK.

RESPONSE TO OFCOM'S QUESTIONS

General Approach

Question 1: Do you have any views on the options for managing the 2 GHz MSS band after 13 May 2027? Are there any options that Ofcom has overlooked?

We believe that the three options identified in the consultation reflect the possible directions that Ofcom could take upon the expiry of the current UK and EU authorisations of the band. We have not identified any distinct, credible alternative options.

Option 1 - Clear the band of its current use and move forward with long-term authorisation proposals in 2027

We agree with Ofcom's assessment of Option 1. Given the uncertainty around the longer-term framework for the band within Europe, along with the presence of near-term demand for incumbent services, proceeding with a UK-only clearance and long-term approach for the band would not be appropriate. Doing so would cause otherwise avoidable interruption to incumbent services, create significant risk of cross-border interference, and would be a missed opportunity to enable the widest benefits and secure optimal use of the spectrum.

Option 2 - Clear the band of its current use and leave the spectrum unused until we have more certainty

We agree with Ofcom's assessment of Option 2. Proceeding with a UK-only clearance of the band and leaving the spectrum laying fallow, would not be appropriate. As with Option 1, it would also cause otherwise avoidable interruption to incumbent services in the near-term, representing a missed opportunity to enable benefits and secure optimal use of the spectrum.

Option 3 - A short-term extension for authorised users

We agree with Ofcom's assessment of Option 3. Proceeding with this option will ensure that the spectrum does not lie fallow, and that incumbent services are not immediately disrupted. Enabling a period of continuity for incumbent services in the near-term, where there is clear continuing demand for them, whilst managing this through a robust and pragmatic transition plan, with rights of access focussed on the continuity of incumbent services in the near-term, represents a balanced approach that is likely to result in good outcomes and secure optimal use of the spectrum during this period.

At the same time, Ofcom should closely track the development of the emerging EU framework. This is especially important to ensure that Ofcom preserves the option to align, to the extent possible, with the direction of travel and final conclusions within Europe, so that the UK can capitalise on any key benefits that alignment could bring.

If Ofcom decides to proceed with Option 3, it should monitor the market closely for demand, the development of commercial services, and operators' readiness to use the spectrum. We

observe that there is significant interest from various parties to gain access to this spectrum to deliver a range of services. VMO2 believes that it would be appropriate to allow some limited access to the spectrum during the extension period, but on a restricted basis in terms of timeline, geography, and power. This would enable testing and trials for incumbents and non-incumbents who may wish to develop enhanced and/or new services before they are launched. This will need to be managed carefully with clear technical conditions to minimise the risk of interference to live incumbent services in the band, and to ensure that access does not allow the system to be gamed for unfair advantage e.g. by launching commercial services during the transitional period, which could distort competition in the band before decisions on its future have been made.

A short-term extension will provide flexibility for Ofcom to respond to evolving technologies, emerging business models, international regulatory developments, and avoid artificially delaying the launch of innovative services that would provide value to the UK. We agree with Ofcom that any proposed interim authorisation for incumbents use of the band should be on a without prejudice basis to Ofcom's future decisions on the longer-term use of the band, and will not serve as a guarantee of continued access beyond the end of the transition period.

Question 2: Do you agree with our proposal for a short-term transition period, which authorises Viasat and EchoStar? Please set out your reasoning.

VMO2 supports Ofcom's proposed approach to extend the existing 2 GHz MSS licences for incumbent services for a transitional period while a longer-term framework for the band is developed. We believe this strikes the right balance between providing certainty for incumbents in the near term, whilst also allowing time for the market, technology, and wider regulatory policy to develop, before key decisions are made on the long-term future of the band.

The market is moving fast, so a shorter transition period provides greater flexibility for Ofcom to respond to developments, and avoid artificially delaying the launch of innovative services that would provide value to the UK.

Ofcom should be mindful of the need to avoid unintended consequences and the distortion of competition, by ensuring that the transitional period, and the usage rights granted for it, are focussed on the continuity of incumbent services in the near-term, and that the system cannot be gamed in a way which could restrict competition and impact the long-term success of the band.

As we have highlighted, we think it would be appropriate for Ofcom to allow some limited access to the spectrum during the extension period, to facilitate tests and trials on a non-commercial basis for incumbent, and non-incumbents, who may wish to develop services before they are launched and assess service provision and other technical and operational aspects.

Proposal for interim transition period

Question 3: Do you agree with our preferred option for the duration of the proposed interim authorisation to be a three-year fixed period? Please set out your reasoning.

Option 1 – Short-term authorisation period of three years

We agree with Ofcom's preferred option. A three-year period strikes the right balance between providing certainty for incumbents in the near term, whilst also allowing time for the market, technology, and wider regulatory policy to develop, before key decisions are made on the long-term future of the band.

As we have stated, we agree with Ofcom that any proposed interim authorisation for incumbents' use of the band should be without prejudice to Ofcom's future decisions on the longer-term use of the band, and it does not serve as a guarantee of continued access beyond the end of the transition period.

Option 2 – Short-term authorisation period of five years

We do not believe that this alternative option would be suitable. It would lock Ofcom into a defined course over a longer period, when developments at the EU level could take a different course, and the market could develop quickly, leaving Ofcom unable to respond in an agile fashion. This could deny access to the spectrum for alternative, higher value uses, when operators may be ready to use it to provide services that could deliver significant benefits for the UK.

Question 4: Do you agree with our proposed approach to authorise continued use of the spectrum during the interim authorisation period through a CGC licence, licence exemption, and Aircraft Radio licence? If not, please set out your reasoning and alternative suggestions.

Yes. We agree with the proposed approach. However, Ofcom should make clear that this is focused on enabling continuity of incumbent services in the near term and any other use is strictly limited to non-commercial tests and trials. It is therefore not necessarily an indication of precedent for the longer-term framework, or authorisation of other services in the band, as further analysis to establish potential risks and benefits would first need to be undertaken to assess possible impacts over the long-term.

Question 5: Do you have any comments on the alternative approach we have considered, of licensing the satellite operators to use 2 GHz MSS during the interim authorisation period? If you have a preference for this approach, please set out your reasoning.

This alternative approach carries risk and does not appear to be the least intrusive method of meeting Ofcom's objectives. It would represent a significant change to the regulatory framework, which is not necessary to enable the continuity of incumbent services in the near term. It could also create wider uncertainty around the scope of rights to use the spectrum and risks being gamed, by enabling licence holders to influence the longer-term framework

for the band before it has been decided, which could result in an arbitrary outcome and distortion of competition.

Question 6: What are your views on the approach Ofcom should take to fees for the interim authorisation period? Please set out your reasoning and provide evidence where appropriate.

As we have highlighted, Ofcom should aim to ensure a level playing field and seek to avoid the distortion of competition or commercial incentives. The 2 GHz MSS licensees should be treated in a broadly similar way to terrestrial mobile spectrum licensees. Existing 2 GHz MSS licensees benefit from substantially lower spectrum fees when compared to terrestrial mobile network operators who incur high ALFs for spectrum.

Option 1

Of the two options presented by Ofcom, Option 1 is the most appropriate. As Ofcom highlights, maintaining the existing fee structure with no substantive changes, would support the continuity of incumbent services in the near term and be consistent with Ofcom's broader aim of minimising changes to the current framework during a transitional period.

Option 2

We do not agree with the alternative option to waive fees in the interim transition period. Authorising use of the band without fees would result in an even greater imbalance than exists today between MSS licensees and MNOs. It is also misaligned with the value of the spectrum and the commercial benefits gained by enabling the continuity of incumbent services.

Question 7: Do you agree with our proposals to enable additional users to access the spectrum during the interim period? If yes, do you have a preference for how we should enable other users during the short-term extension period? Please set out your reasoning.

VMO2 observes that there is significant interest from various parties to gain access to this spectrum, to deliver a range of services. As we have highlighted, we believe that it would be appropriate to allow some third-party access on a restricted basis in terms of timeline, geography, and power, to enable tests and trials for incumbents and non-incumbents who may wish to develop enhanced and/or new services before they are launched. This would need to be managed carefully with clear technical conditions to minimise the risk of interference to live incumbent services in the band, and to ensure that access does not allow the system to be gamed for unfair advantage e.g. by launching commercial services, as this could distort competition in the band before decisions on its future have been made.

Question 8: Do you have any other views on the details of our proposal to authorise Viasat and EchoStar during the interim period?

We have no further views beyond those we have provided in our responses to Ofcom's other questions regarding the proposed interim authorisation period.

Proposals for deciding on our longer-term approach to 2GHz MSS

Question 9: Do you have any comments on the technical and operational implications of the four approaches to long term authorisation we have set out?

There are several factors that will likely influence the long-term outcome of the 2 GHz MSS band, these include the following important areas:

European Regulatory Developments

Recent work by CEPT and in the RSPG Opinions, shows an inclination towards enabling the introduction of new services such as D2D in the band in future, but maintaining the spectrum for MSS use in the interim period. However, under current proposals, in the longer-term, the spectrum would be segmented according one of four options. The EU level authorisation may follow a full or partial approach that allows some incumbent continuity, whilst enabling part of the band to be used by new entrants. It is expected that rights will be awarded through a beauty contest, with the current licence holders required to apply for the licences and thus compete with other applicants.

Ecosystem and Service Developments

We understand that Viasat are targeting an upgrade to 5G NR and expansion of their systems, mainly around airlines and Air-to-Ground (“A2G”) customers for data and voice connectivity. While EchoStar is expanding their LEO satellites for LORA and future NTN-IOT, they plan to construct and deploy a 3PP-NTN global LEO satellite network in 2026/2027. New entrant, Skylo, is focused on NTN-IoT. Omnispace and Ligado are combining their MSS networks to provide NTN D2D connectivity. SpaceX, AST SpaceMobile, and Amazon Leo are also expanding. This highlights that the ecosystem and service development is evolving at a rapid pace.

3GPP Work

3GPP has completed a substantial amount work related to NTN in Release 17 and Release 18. The NR-NTN and IoT-NTN solutions are outlined in technical specifications TS 38.300² and TS 36.300³ respectively. Since the uplink at 1980-2010 MHz, and the downlink at 2170-2200 MHz overlaps with 3GPP terrestrial band n65, the 3GPP specifications support that 3GPP devices could operate simultaneously with a Complementary Ground Component (“CGC”) in CEPT countries, as referenced in TR 38.863.⁴

We provide, below, an outline of our views on each of the four options that Ofcom has identified in relation to possible approaches to long-term authorisation.

² <https://portal.3gpp.org/desktopmodules/Specifications/SpecificationDetails.aspx?specificationId=3191>

³ <https://portal.3gpp.org/desktopmodules/Specifications/SpecificationDetails.aspx?specificationId=2430>

⁴ <https://portal.3gpp.org/desktopmodules/Specifications/SpecificationDetails.aspx?specificationId=3926>

Option A - Minimal intervention (ITU filings-led approach)

As Ofcom highlights, in theory, proceeding with this approach could result in a single D2D provider gaining access and developing a level of market power which would restrict competition. It could also result in spectrum hoarding. Furthermore, this approach is misaligned with the current direction within the EU, and could result in the UK being unable to gain from alignment benefits, leaving it in an inferior position, and increasing the risk of cross-border interference. This would be a highly risky approach to take, and it would not align with Ofcom's duty to promote competition and its desire to avoid undue interference.

Option B - Retain status quo but introduce scope for trading

Like Option A, proceeding with this approach risks the UK being unable to gain from alignment benefits if the EU takes a different approach. It could also lead to the spectrum being acquired prospectively and prevent it from being used for services that would deliver greater value, resulting in poor outcomes for the UK. In addition, it may also limit the ability for license conditions such as fees, to be more closely aligned with those for terrestrial mobile spectrum, as well as increase the risk of cross-border interference. We therefore do not agree that it would be appropriate or beneficial for the UK to adopt this approach.

Option C - A UK-led approach, which may include a competitive award

As Ofcom highlights, the outcome of this approach would be influenced by how the award was structured and the extent of any competition measures included. Whilst an award may be appropriate and could align with the possible direction at EU level, if it did not suitably align, it could lead to a worst-case outcome whereby a single operator secures either all the spectrum, or an amount that would give it an unmatched advantage, which would lead to an absence of, or a significant reduction in, competition. Given the current proposals within Europe, proceeding with a UK-led approach that is divergent from Europe, could result in fragmentation, different spectrum assignments, loss of harmonisation benefits, and increased risk of cross-border interference. It could mean higher costs (less economies of scale for constellations), possible delays to device compatibility if alternative licensees use different technical standards to those in Europe, and it may limit coverage footprint and service quality due to the need to apply more stringent cross-border interference protection measures that would otherwise be the case with aligned standards.

Whilst it *might* be possible for Ofcom to take a UK-led approach, which may include a competitive award, and still significantly align with Europe, it is likely to be a challenge, and the timing and decisions would need to be suitably aligned with those at the EU level, to avoid the risk of significant divergence and a sub-optimal outcome for the UK.

At the EU level, the award is expected to take place through a beauty contest. This could be the best mechanism for this band, where the award seeks to prioritise technological merit, innovation potential, service commitments and broader public interest benefits, rather than focusing predominantly on economic value or incumbent advantages derived from existing

ITU filings. However, excessive weight on either factor risks reinforcing existing market positions and limiting competitive entry. The future framework should seek to accommodate a diverse range of licensees and business models, thereby promoting innovation, competition and the development of new services.

Option D - Alignment with the EC decision

As we have highlighted, Ofcom should seek to align, to the extent possible, with activities in Europe and decisions at the EU level in relation to the future of the band. Europe-wide harmonisation is critically important to provide the certainty required for investment and to create an ecosystem that will support economies of scale for equipment, enable the efficient delivery of services, and minimise the risk of cross-border interference.

Option D would enable this alignment, as well as provide certainty for the market. It would enable providers to operate pan-European services, deliver economies of scale - therefore avoiding unnecessary costs, and will support and encourage investment. As Ofcom highlights, it can also enable interoperability, and reduce the risk of cross-border interference. Proceeding with this approach will ensure that the UK can capitalise on the benefits that alignment with the EU and spectrum harmonisation will bring, and provide the best chance of long-term success for the band.

Question 10: Which would you consider is the optimal approach to take for long-term authorisation? Are there any alternative approaches we have not considered? If so, please outline them.

We believe that Option D is likely to be the optimal approach for Ofcom to take on the long-term authorisation of the band.

We note that Ofcom highlights that this option could take differing forms, such as aligning on one or more of areas, for example, bandwidth allocations, types of services, or authorisation of the same operators in the same bandwidths. In this respect, we believe that alignment on the services authorised, the size of the spectrum block and the frequencies allocated to each bloc, are particularly important, as divergence is likely to result in significant risks and lead to disadvantages for the UK.

We agree with Ofcom that it should have a better understanding of these risks once there is greater clarity the approach at the EU level, and that it would be sensible to assess these factors and possible approaches when the situation in Europe is made clearer following the expected next steps in that process.

Alternative Approaches

Whilst not a fully distinct alternative approach, as we have outlined, a combination of Option C and Option D might be viable, but it would carry risk. A UK-led competitive award process could possibly be designed to align with the EU process, whilst still providing an element of flexibility for the UK to ensure that it optimises its position. However this is likely to be

challenging, and the timing and decisions would need to be suitably aligned with those at the EU level, to avoid the risk of significant divergence and a sub-optimal outcome for the UK.

We have not identified any other alternative credible approaches.

Question 11: Do you have any further comments on factors we should consider when determining our approach to the longer-term UK authorisation of the 2 GHz MSS band?

Please refer to our 'General Comments' section at the beginning of our response which outlines some of the factors that Ofcom should consider when determining the longer-term approach for the band.

We also wish to highlight that it is likely to be beneficial to allow access to applicants that do not currently own equipment or directly operate in the space market, provided that they can demonstrate a legally binding right of access to the required satellite capacity for the period necessary to meet the milestones and authorisation conditions, and that they retain effective control over the provision of the authorised service. This third-party access would support even greater competition in the market. However, Ofcom should ensure that the framework cannot be exploited e.g. rights acquired prospectively and/or spectrum hoarded which would prevent optimal use.

Question 12: Do you have any comments on the Impact Assessments?

We have no further comments.