Virgin Media O2 response to Ofcom Consultation:

Award of 1492-1517 MHz spectrum for mobile services

(Questions 1 – 15)

April 2025

INTRODUCTION

Virgin Media O2 ("VMO2") welcomes the opportunity to respond to Ofcom's consultation on the Award of 1492-1517 MHz spectrum for mobile services.[1]

GENERAL COMMENTS

As we set out in our response to the October 2023 Call For Inputs on Ofcom's coexistence analysis[2], based on Ofcom's modelling and the resulting proposed PFD limits and coordination zones, we believe that mobile deployment in the spectrum for award is likely to be significantly constrained. Furthermore, the additional restrictions proposed to be applied to the top 5 MHz at 1512-1517 MHz mean that we are unlikely to consider it usable spectrum. We therefore encourage Ofcom to ensure that restrictions and coordination distances are kept to the minimum required and that protection constraints in Phase 1 are relaxed as soon as practicably possible, to avoid delaying the benefits to users of mobile services.

The remainder of our response focusses on Ofcom's specific questions 1-15. We are providing our response to questions 16-19 separately.

RESPONSE TO SPECIFIC QUESTIONS (1-15)

Question 1: Do you agree with our proposal that 'Phase 1' protections would be required to avoid the potential for significant disruption at ports and airports?

Whilst we agree that some Phase 1 protections are required to avoid the potential for significant disruption at airports, the proposed protection conditions will significantly constrain mobile deployment. We believe that the coordination distances identified by Ofcom could be reduced in practice to around 4 km for airports and 10 km for ports, though we note and support Ofcom's view that it is not currently minded to define specific coordination zones for ports in Phase 1. Our analysis has found that reduced coordination distances can be achieved in practice, on the assumption of transmitting at an EIRP of 66 dBm/5 MHz within 1492-1512 MHz. The path loss for these reduced distances will ensure that PFD limits are met.

Coordination distances can be reduced for ports, based on link budget calculations as follows:

- The total EIRP for a 10 MHz carrier is bounded to =< 71 dBm, considering an antenna gain of 18 dBi.
- Converting transmitted power 71 dBm to 41 dBW.
- The PFD coordination threshold limit at ports is -74.9 dBW/m2.

[1] Consultation Award of 1492-1517 MHz spectrum for mobile services
[2] Call for inputs on Ofcom's coexistence analysis

- The free space path loss for the 5G NR transmitted signal is > 116 dB at 10 km.
- This ensures that the PFD limit of -74.9 dBW/m2 is easily met.

The same calculation can be applied to airports as follows:

- The PFD coordination threshold limit at airports is -53.5 dBw/m2.
- The free space path loss for the 5G NR transmitted signal is > 95 dB at 4 km.
- This ensures that the PFD limit of -53.5 dBW/m2 is easily met.

If actual total EIRP transmitted power is 69 dBm for 10 MHz, this enables a further reduction.

Question 2: Do you agree with the list of airports we propose to protect, in Annex A8?

At A6.6 in the consultation, Ofcom highlights that in its response to the October 2023 Call For Inputs, the GSMA noted that the Danish regulator, SFDI, decided not to impose restrictions on mobile use around ports and only imposed restrictions around airports which have regular transatlantic flights. We encourage Ofcom to align with this approach and to ensure that only airports with *regular* transatlantic flights are included in the list of airports proposed for protection.

Question 3: Do you have any comments on the two options we have proposed for the ports which would require protection, noting the further detail (and requests for specific evidence) in Annex A7?

We are supportive of option A, an accelerated upgrade process over a relatively short period. However, we believe that a Phase 1 period of 3-4 years from the date of Ofcom's final decision is achievable and appropriate to avoid delaying the benefits to users of mobile services.

Question 4: Do you agree with our preference to reduce these restrictions to 'Phase 2' levels over a shorter timeline than the natural lifecycle of the terminals?

Yes, we agree. However, as stated above, we believe that a Phase 1 period of 3-4 years from the date of Ofcom's final decision is appropriate to avoid delaying the benefits to users of mobile services.

Question 5: Taking into account the further detail in Annexes A7 and A8, please provide any evidence:

• that a shorter period, around five years, for the relevant receivers to be replaced or upgraded is not technically or practically feasible; or

• of the impact that a longer period of up to 20 years may have on the ability of MNOs to use the spectrum and the benefits to consumers and citizens that would be foregone.

The spectrum for award can provide wide area coverage and capacity, however, the proposed Phase 1 protection conditions will significantly constrain mobile deployment including in high demand areas, due to the extensive coordination zones which would extend across highly populated areas.

Longer periods would negatively impact investment incentives, lead to lower spectrum utilisation and slower deployment, further delaying the benefits to users of mobile services.

A shorter Phase 1 period of 3-4 years would enable an earlier, more efficient and more widespread deployment of mobile base station radio transceivers.

Question 6: Do you agree with our proposal not to put in place restrictions on IMT use of this spectrum to protect: (a) land terminals; (b) potential future uses of the 1.5 GHz spectrum; or (c) PMSE users.

In this regard, we particularly welcome:

• any evidence that Inmarsat's land terminals are used for the operation of critical national infrastructure or safety purposes;

• any evidence that it is not technically or practically feasible to replace Inmarsat land terminals, including through alternative solutions or upgrades; and

• any evidence on the impact of protecting land terminals on the ability of mobile network operators ("MNOs") to use the spectrum and the benefits to consumers and citizens that may be foregone.

Yes, we agree with the proposals. We note that the proposals are in line with the guidance in ECC report 299.

Question 7: Are you able to provide any evidence on the likelihood of audio links suffering interference from IMT use of 1492-1517 MHz?

No.

Question 8: Do you agree with our proposed approach to coordination?

We agree with the approach that Ofcom is minded to implement for airports, that is, to define coordination zones around airports as polygons that enclose a fixed range around each of the PFD limited zones (Option 3).

We also agree with the approach that Ofcom is minded to implement for ports, that is, *not* to define specific coordination zones at Phase 1. At Phase 2, to define coordination zones as polygons around the PFD limited zones (Option 3).

Question 9: Do you agree with our proposal to define PFD limited zones as complex polygons? Would defining them as a set of points, rather than an entire boundary, make coordination calculations easier for licensees?

Yes, we agree with Ofcom's proposal to define PFD limited zones as complex polygons.

Question 10: Do you agree with our provisional view that not defining coordination zones around ports may be simpler for licensees than complying with multiple different coordination zones, particularly while Phase 1 PFD limits are in place?

Yes, we agree.

Question 11: Do you have any feedback on the coordination procedures (as set out in Annex A10) or the specific parameters proposed?

We believe the Phase 1 coordination range for airports could be reduced to 4 km in practice.

Question 12: How difficult would you find it to comply with our proposed coordination requirements? In particular, we are interested in information from potential licensees on how the proposed coordination zones would affect their deployment processes and decisions.

Coordination requirements will necessitate additional time, resource and cost to plan and validate each mobile radio site deployment to facilitate rollout, compared to not having any coordination requirements which would see faster more efficient rollout. Minimising coordination requirements will therefore reduce these frictions and enable faster more efficient rollout.

Question 13: Do you have any comments on our proposal that licensees should carry out their own coordination, on the basis of coordination parameters set by Ofcom?

We agree with Ofcom's proposal that licensees should carry out their own coordination, on the basis of coordination parameters set by Ofcom.

Question 14: Do you have any comments on our proposed technical licence conditions?

We have no further comments on the proposed technical licence conditions.

Question 15: Do you have any comments on the non-technical licence conditions that we propose to include in the award licences?

We agree with Ofcom's proposal to award indefinite licences with an initial term of 20 years and that the licences will be on a national basis.

In relation to Ofcom's consideration of an alternative approach whereby bidders bid for Annual Licence Fees ("ALFs"), we agree with Ofcom's proposal not to design the auction in

this way. If MNOs wish to remove trading frictions there is already precedent for them to convert ALFs into lump sums i.e. the reverse process, which H3G did at 3.4/3.6 GHz to make their spectrum comparable with Vodafone, ahead of their merger. Furthermore, our experience is that we have purchased spectrum with ALFs attached and that solving that was tractable.

We note Ofcom's proposal to allow other users to access this spectrum through the existing Local Access Licensing framework. We request that Ofcom clarifies that it would not introduce this straight away, as a licensee will need time to decide where to deploy the spectrum. This approach would align with section 3.10 of Ofcom's Local Access Licence Guidance document which states "*It should be noted that we would not expect access to newly awarded bands to be possible straight away (and possibly not for some considerable time), as the licensees will need time to decide where they intend to use the frequencies themselves*[3]

We note at 7.31 in the consultation that Ofcom does not propose to include any roaming obligations in licences for this spectrum, but that it does not rule out the possibility of looking to impose roaming conditions, as appropriate, in these licences in the future and that any future proposals would be subject to analysis and consultation at the time. We would highlight that as this spectrum is SDL, we believe that the future imposition of any roaming obligation would be very difficult in practice and would only benefit existing spectrum holders who would have an uplink, which would appear to be disproportionate.

[3] local-access-licence-guidance.pdf