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Freshwave's response to Ofcom's consultation "Mobile Phone Repeaters" dated 19th May 2021

Freshwave welcomes the opportunity to respond to the above consultation ('the 2021 Consultation').

Freshwave invests expertise and capital in digital infrastructure. We are a leading network service provider, bringing together mobile operators, public authorities and real estate providers to extend high quality coverage and capacity in thousands of locations across the UK, including within 2000+ buildings.

We support Ofcom's objective to secure the optimal use of spectrum and the availability of a wide range of electronic communications services, and its priority for 'Getting everyone connected'.

The small cell and distributed antenna systems Freshwave designs, deploys and manages extend coverage without adversely affecting the quality of service (QoS) of the existing mobile networks. They are built with the collaboration of the mobile network operators (MNOs) to ensure inbuilding coverage does not interfere with outdoor coverage, and use dedicated connections to the MNO cores. Repeaters, by contrast, share capacity with the existing MNO cell, affecting the QoS for other users. We do deploy repeaters in certain circumstances, however only with the permission of the MNO or under their instruction, so they are able to manage the impact on their network.

We share Ofcom's aim to extend MNO services indoors, however we are far from convinced that the proposed regulatory intervention is required. Instead, Ofcom should leave this decision (on whether to allow repeaters and under what conditions) to each MNO, which could differentiate its repeater offering as it does with, for example, femtocells or Wi-Fi calling. Ofcom has not provided evidence of any market failure.

We are aware of the issue of illegal repeaters in the UK which have a significant impact on the QoS of mobile services. However, we are not convinced Ofcom's proposals will significantly reduce the deployment of illegal repeaters. If the MNOs were persuaded that Ofcom's proposals would reduce interference then we believe it's likely that the MNOs would be supportive of them. Instead, all four MNO responses to Ofcom's earlier (2017) consultation on repeaters were critical of these proposals. Ofcom's 2017 statement acknowledges this: "The four MNOs raised concerns about the risk of interference to mobile networks from licence exempt mobile phone repeaters". Specifically, BT/EE stated in their response that "unauthorised mobile repeaters should not be permitted, even subject to the constraints proposed by Ofcom". Telefonica wrote "we have serious concerns that Ofcom proposals, whilst well-intentioned, are ill thought out and could lead to disruption to the high-quality service". Three's view was that "Current proposals are underdeveloped at this stage", and Vodafone that "the best approach all round is that they [repeaters] are allowed only with the consent of the parties licensed to use the spectrum".

All four MNOs stated the importance of registering any repeater, including its geolocation, with the operator, so they could manage their networks effectively. A registration process would also help Ofcom's Spectrum Compliance Team when investigating interference cases. Nevertheless, Ofcom implemented its 2017 proposals with no requirement to register repeaters.

We note the 2017 Statement refers several times to homes or homeowners, but not to businesses. Our understanding at the time was that the new regulations were targeted at homeowners. However, Interface Requirement IR2012.1 refers only to “Indoor Use” and does not distinguish between homes, or larger premises such as buildings with perhaps hundreds of mobile users. A quick search online reveals that since the 2017 Statement, large repeater systems have been proposed or are operating in buildings with close to 1000 desks.

The 2021 Consultation contains mixed messaging on whether the proposed loosening of regulations would apply to large businesses, e.g. paragraph 2.5 states “we are setting out our provisional thinking on whether there are any changes that Ofcom could make in order to provide people and businesses with greater options to improve mobile coverage in their homes”. We believe this loophole in the IR should be closed and that it should be modified to limit the size of licence-exempt repeater systems, using a limit definition to be agreed with the MNOs.

Paragraph 2.17 in the 2021 Consultation document states that “Ofcom has a duty to make regulations to exempt specific equipment from the requirement for a licence if its installation or use ... is not likely to: involve undue interference with wireless telegraphy” or “have an adverse effect on technical quality of service”. While a few compliant repeaters used by a small number of users in a single cell might not impact QoS significantly, it is firmly our view that one or more repeaters within a single MNO cell used by potentially hundreds of users would have a substantial impact. This problem is even more acute in urban areas where existing mobile capacity is more likely to be under strain already.

It is our understanding that the UK is almost unique in allowing licence-exempt repeaters. The US FCC defines two signal booster (repeater) types - Consumer and Industrial - nevertheless both types need specific MNO consent for operation. The 2017 and 2021 consultations make no reference to repeater regulations in other countries or explain Ofcom’s apparent divergence.

The 2021 Consultation comes only a short time after implementation of the 2017 Statement and gives little analysis of the impact of this statement. We remain unconvinced of the urgency for any further loosening of the regulations to allow licence-exempt provider specific or multi-operator repeaters. Once these are allowed then it will be very difficult to row back if this intervention is subsequently shown to be counterproductive. During a time of arguably unprecedented UK network change including spectrum refarming, 3G switch off, equipment swap, 5G roll out and so on, maintaining the extent and coverage of repeaters already deployed is likely to become significantly more challenging. And as people simultaneously return to city centres, amidst all this other network change, the possibility of a reduced customer experience through repeater coverage increases. We instead urge Ofcom to enter into dialogue with the MNOs and other stakeholders to help identify the regulatory regime which is most likely to improve both the extent and quality of mobile coverage. It should also include introducing limitations on the number of multiple repeaters which are allowed to be used in large buildings.

Responses to the specific 2021 Consultation questions are given below.

Question 1: Do you agree that Ofcom should consider working with relevant industry partners to develop a voluntary testing standard, and publishing a list on our website of static indoor mobile phone repeaters that comply with our licence exemption requirements?

Yes. Such a list should be made available as soon as possible and before any further relaxation of the repeater regulations. We recommend also that Ofcom provides a link to a repeater page for each MNO, allowing the MNO to state its position on the use of repeaters, to recommend installers and to inform businesses of possible alternatives such as femtocells or Wi-Fi calling.

Question 2: Do you agree that we should modify IR 2102.1 to allow for ‘provider specific’ mobile phone repeaters? If you do not agree, please explain your reasons.

No. As discussed above we are concerned about the impact of unapproved (by the MNO) repeaters on network QoS and any loosening of the regulations which might increase the number of such repeaters, until such times as agreement is reached with the MNOs, for example with registration of all repeaters.

Question 3: Do you agree that we should make ‘multi-operator’ mobile phone repeaters complying with the technical requirements outlined above (and set out in the draft UK Radio Interface Requirement IR 2102.3 at Annex A3) licence exempt? If you do not agree, please explain your reasons.

No. We are concerned that a common gain for all MNOs would be more detrimental to QoS than single operator or provider specific repeaters.

Question 4: Do you agree with our provisional view as set out in paragraph 3.48 above? If you do not agree, please explain why you think the requirement is not necessary.

No comment.

Question 5: Do you agree that it would not be appropriate to allow the use of licence exempt repeaters in the 2.6 GHz band? If you do not agree, please explain your reasons.

Yes.

Question 6: Do you agree that we should allow the use of static indoor mobile phone repeaters (on a licence-exempt basis) in the paired 700 MHz mobile band?

As outlined above we are concerned about the impact of unapproved (by the MNO) repeaters on network QoS, however we see no reason to exclude the 700 MHz band from the relevant IR.

Freshwave