

Improving access to Wi-Fi

- Spectrum use in the 5 and 6 GHz bands

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1. Executive Summary

- 1.1. BT welcomes Ofcom's proposals to make more spectrum available for Wi-Fi by shared access to the lower 6 GHz band (5,925 – 6,425 MHz) under the conditions proposed, including the power limits for indoor and outdoor use that are necessary to manage the risk of interference to existing and future satellite services and fixed microwave links.
- 1.2. Wi-Fi traffic continues to grow rapidly and is forecast to continue to do so. Users require ever increasing bandwidths for new applications and delivered with high reliability, such as for streaming TV in the home. The identification of extra spectrum for Wi-Fi now is important as the introduction of a new band in to devices will result in only gradual increasing use as devices are rolled out but is necessary to ensure that sufficient capacity is available for the future and that interference problems resulting from local congestion are reduced.
- 1.3. We also support removal of the requirement to implement Dynamic Frequency selection (DFS) for Wi-Fi channels in the 5.8 GHz band (5,725 – 5,850 MHz). This will make the band more readily useable for Wi-Fi and will lead to a more efficient distribution of traffic across the range of Wi-Fi channels that are available.
- 1.4. The proposed licence-exempt use of these bands is rightly focused on Wi-Fi given present use, but we continue to support a technology neutral approach and note that in principle other technologies such as LTE and future 5G could be relevant. The proposed changes to the UK Interface Requirement (IR2030) to remove the DFS requirements on the 5.8 GHz band and to add the lower 6 GHz band may benefit from further clarity in this respect.

2. Introduction

- 2.1. BT is a significant stakeholder in the use of Wi-Fi in the UK through the provision of public Wi-Fi networks and the supply of Wi-Fi hubs to consumers and businesses related to the provision of fixed broadband. Wi-Fi calling is also increasingly used by our mobile customers when in buildings and we deploy Wi-Fi networks at scale for corporate customers in the UK and beyond.
- 2.2. We welcome and support Ofcom's consultation proposals to expand and simplify the use of spectrum available for Wi-Fi in the UK. We set out our views and evidence in response to each of the consultation questions in section 3 below.

3. Response to consultation questions

Question 1: Do you have any comments on our proposal to open access to the 5925-6425 MHz band for licence-exempt Wi-Fi use?

- 3.1. BT fully supports Ofcom's proposal to make this bands available for Wi-Fi. This is an important step to avoid future congestion and interference of Wi-Fi systems in areas of very high traffic density and would promote efficient and optimal use of the 5,925 – 6,425 MHz band.
- 3.2. This band will be particularly useful with the introduction of Wi-Fi 6, allowing this technology to operate to its full potential in the absence of legacy devices.

Question 2: Do you have any comments on our technical analysis of coexistence in the 5925-6425 MHz band?

- 3.3. BT operates both satellite networks and fixed microwave links in the 5925 – 6425 MHz band and we are concerned, that these bands remain available, that interference from shared licence-exempt use of the band is appropriately controlled and that risks are mitigated to an acceptable level.
- 3.4. In relation to fixed links, we operate 135 links (over 20 paths), mostly located in more rural areas of the UK. Having reviewed the CEPT studies and the further Ofcom considerations of the UK specific scenario we agree that with the power limits proposed the risk of interference is reduced to an acceptable level.
- 3.5. In relation to fixed satellite services, the aggregate interference to receivers on satellites is a concern. The very low levels proposed for outdoor Wi-Fi use and the projected numbers of such systems suggests that sharing is feasible and on that basis we are content with the proposals.

Question 3: Do you agree with our proposal to remove DFS requirements for indoor Wi-Fi up to 200mW from the 5725-5850 MHz band?

- 3.6. Yes, BT agrees that the DFS requirement should be removed. It is a significant barrier to the use of the band for Wi-Fi and it appears to not be a proportionate measure to protect the radar use given the very low potential for interference problems arising.
- 3.7. The regulations and requirements surrounding licence-exempt use of the Wi-Fi bands are somewhat complicated, both for Wi-Fi as well as other potential uses such as LTE given that in principle a technology neutral approach is applicable. Ofcom proposes to remove the requirements for DFS in the 5.8 GHz band by deleting only an informative (rather than normative) provision with the IR 2020. The references to the channel occupancy requirements set out in the 5 GHz harmonised standards for Wi-Fi are still referenced for the band in the proposed amendment IR 2030. We wonder whether it would be appropriate to add an explicit statement that DFS is not required (and also for the equivalent entry for the new lower 6 GHz band)?

Question 4: Do you have any comments on other options that may be available for Wi-Fi and RLANs within the 5150 - 5250 MHz band?

- 3.8. We support Ofcom undertaking further work to look at how low power outdoor use could be implemented in the UK following the changes to the ITU radio Regulations for RLAN use of this band agreed at the ITU WRC-19.