Non-Confidential

Expanding access to the 6 GHz band for mobile and Wi-Fi services

Proposals for AFC in Lower 6 GHz and mobile / Wi-Fi sharing in Upper 6 GHz

BT's response to Ofcom's consultation issued on 13 February 2025

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BT Group

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Executive summary

1. **BT welcomes Ofcom's proposals** on expanding access to the 6GHz band for mobile and Wi-Fi services in the UK and the opportunity to provide our views.
2. **The Upper 6GHz band is an essential element of a UK mobile spectrum roadmap**. This mid-band spectrum is needed to deliver the additional network capacity and investments required for the cost effective deployment of 6G in the UK.
3. **BT is concerned with the proposal to make standard power Wi-Fi available in the Lower 6GHz band, under the control of an automated frequency coordination (AFC) database**. The Lower 6GHz band is a key band used by BT's newest public, Consumer and Business Wi-Fi hubs that will be rolled out to millions of broadband customers. We have concerns that introducing standard power Wi-Fi, under AFC database control to prevent interference to other radio services, could in some scenarios lead to significant reduction of capacity of existing low power Wi-Fi networks.
4. **BT welcomes Ofcom's proposal to prioritise mobile use of the Upper 6GHz band, at least in urban areas , but has concerns over several aspects of the proposals**, including:
    a. early introduction of Wi-Fi in the Upper 6GHz band, which risks future interference with mobile;
    b. prioritisation of mobile use in urban areas in only part of the band, which leaves insufficient capacity for cost effective MNO investments in 6G; and
    c. running ahead of completion of European studies on technical mechanisms to facilitate shared use between mobile and Wi-Fi, and European harmonisation decisions on future use of the band.
5. **We would suggest that further areas of work are undertaken** before Ofcom reaches final conclusions on how to proceed, including:
    a. Undertake, or consider available results of, practical tests to prove the viability of sharing rather than relying solely on theoretical studies;
    b. Conduct economic analysis to further understand the costs and benefits of shared use, especially where sharing reduces the value of the spectrum relative to exclusive use, including the implications for 6G rollout in UK;
    c. Await the conclusion of the technical harmonisation work underway in Europe, and subsequent European harmonisation decisions, before authorising new uses of the Upper 6 GHz band in the UK.

1 Introduction

BT is pleased to provide its views on Ofcom's proposals[1] to allow standard power (4W) Wi-Fi in the Lower 6GHz band using a database system, and to enable commercial mobile and Wi-Fi to share the Upper 6 GHz band in the UK.

BT considers that a harmonised European approach to use of the 6GHz band will be important and has been involved via CEPT ECC PT1 to explore potential for future shared use of the Upper 6 GHz band. We have also undertaken some recent trials to explore the potential use of Upper 6 GHz for mobile, and the challenges to address, if mobile and Wi-Fi are to successfully share all or part of the band.

In **section 2** we set out why the Upper 6 GHz band is important for future mobile use, and why it is essential it is included in the future mobile spectrum roadmap, if the UK is to have world-class mobile networks and be at the forefront of 6G developments.

The remainder of the response follows the structure of the consultation document. In **section 3** we address the proposed introduction of standard power Wi-Fi under database control in the Lower 6 GHz band. In **section 4** we respond to the questions on sharing between mobile and Wi-Fi. **Section 5** covers authorisation of Wi-Fi in the Upper 6 GHz band and **section 6** covers the coexistence of mobile with other users in the Upper 6 GHz band.

Finally, in **section 7** we discuss next steps.

2 Importance of Upper 6 GHz within the UK mobile spectrum roadmap

Future mobile spectrum roadmap

We reiterate the point BT has previously made to Ofcom that in Ofcom speeches[2] and a letter to the Chancellor[3] Ofcom has said that UK mobile is unreliable and patchy in many places, but that Ofcom intends to support advanced 5G and 6G. BT is therefore concerned with the absence of a coherent future mobile spectrum roadmap and the negative impact this will have on future mobile network investments, including eventual introduction of 6G. It is also concerning that Ofcom makes no specific mention in this 6GHz consultation document of the

[1] https://www.ofcom.org.uk/siteassets/resources/documents/consultations/category-3-4-weeks/consultation-expanding-access-to-the-6-ghz-band-for-commercial-mobile-and-wi-fi-services/main-document/expanding-access-to-the-6-ghz-band-for-mobile-and-wi-fi-services.pdf

[2] Speech: Regulating for network growth - https://www.ofcom.org.uk/phones-and-broadband/telecoms-infrastructure/speech-regulating-for-network-growth/

[3] Open letter on "How Ofcom contributes to UK growth"- https://www.ofcom.org.uk/siteassets/resources/documents/about-ofcom/public-correspondence/2025/open-letter-how-ofcom-contributes-to-uk-growth.pdf

use of Upper 6 GHz band for 6G, although we acknowledge that a technology neutral approach to mobile networks spectrum is appropriate.

Mobile network quality is fundamental to economic growth for the UK, consumers and businesses.

Industry consolidation and consumer information remedies are, in and of themselves, insufficient to trigger incremental investment. It is important that steps are taken to support capacity improvements that do not require unaffordable new investment, namely making additional new spectrum available.

A future spectrum roadmap is essential to efficiently meet further growth in mobile capacity demand, and to enable future 6G rollout.

Importance of Upper 6 GHz band for future 6G

BT considers the entire Upper 6 GHz band should be prioritised for mobile networks, especially in urban areas. Wi-Fi already has sufficient capacity with the recent availability of the Lower 6 GHz band. We see no need to introduce Wi-Fi access to the Upper 6GHz band in 2025, while the future harmonised technical methods (sharing protocols) to avoid interference when mobile networks are deployed are still unknown and not standardised.

BT's position on the Upper 6 GHz band is aligned with that of Europe's major telecommunications players, as recently set out in a joint letter[4] to European and national regulatory bodies signed by the CTOs of the leading European telecommunications network operators. This letter reiterates our view that the entire Upper 6 GHz band should be available for national mobile networks use.

6 GHz is expected to play a significant role in supporting the deployment of next generation 6G services in Europe. The whole of the Upper 6 GHz band would be required for even the first 6G implementations in Europe.

The Upper 6 GHz band would enable the cost-effective introduction of 6G, and is at present the only band that can meet the anticipated requirement of 200 MHz per operator.

Limiting the spectrum available for 6G will inflate spectrum costs and lead to poorer outcomes for UK consumers compared to other countries. Similar concerns arose in the UK when 5G spectrum was released in a piecemeal and fragmented manner, that the market has to date not been able to fully resolve. According to the GSMA 5G Connectivity Index[5] the UK is performing below many other countries. A policy of not providing sufficient spectrum to support capacity growth and eventual 6G deployments will not help recover this position in the future.

In this context, the current consultation on future use of the Upper 6 GHz band gives continued cause for concern, in that it proposes spectrum sharing detached from market needs of sufficient new mid-band spectrum to support capacity requirements towards the end of the decade and the introduction of 6G.

[4] https://www.gsma.com/connectivity-for-good/spectrum/wp-content/uploads/2025/05/6-GHz-CTO-letter.pdf
[5] https://media-assets-prod.gsmaintelligence.com/content/210224-The-State-of-5G-2024-compressed.pdf

The consultation proposals for Upper 6 GHz, whilst containing some positive elements, such as intent to prioritise some of the Upper 6 GHz band for mobile networks in urban areas, raise concerns. In particular, they do not support 6G requirements, given the limited bandwidths being proposed for mobile priority in urban areas; the potential limitations on power levels to enable sharing with Wi-Fi, without demonstrated net benefits; and running ahead of EU harmonisation, with possible interference between mobile and Wi-Fi, to the detriment of UK consumers and businesses.

Other mobile bands do not replace the need for Upper 6 GHz

Although millimetre waves and 1.4GHz are in Ofcom's roadmap, these have technical limitations and are not sufficient. The mmWave ecosystem is immature and the licences to be offered are 15-year duration with no indication that they would be extended. The 1400 MHz SDL award will have significant exclusion zones, at least for 5 years and potentially much longer, that coincide with high traffic areas where spectrum is needed. The device support for the extended 1.4 GHz SDL spectrum is also limited at present.

In the longer-term, availability of 600MHz (or wider) UHF spectrum is a welcome prospect, but there is no clarity as yet on if, and when, this spectrum will be re-purposed for mobile. Early clarity on Ofcom's stance on pursuing a path towards primary allocation to mobile in the ITU and harmonisation for mobile in CEPT would be welcome.

A mobile spectrum roadmap that includes 3.8-4.2GHz, Upper 6 GHz and 600 MHz, amongst other bands already in preparation, would put the UK on the front foot in improving mobile networks and the experience of UK consumers and businesses.

3 Expanding Wi-Fi access in Lower 6 GHz through AFC

3.1 Demand for standard power Wi-Fi

Question 1:

What interest do you have in deploying outdoor or standard power Wi-Fi or other licence exempt RLANs in the Lower 6 GHz band? Please provide details of the types of expected deployments.

Introduction of standard power (36 dBm EIRP) Wi-Fi in the Lower 6 GHz band, under control of database systems to avoid interference to existing systems, along the lines of what has been introduced in the USA and Canada, is not something that BT requires or advocates.

BT sees the Lower 6GHz band as an increasingly important band for Wi-Fi. Our latest Wi-Fi 7 hubs shipped to our fixed broadband Consumer and Business customers, and our converged

fixed/mobile solutions, utilise the Lower 6 GHz band. Protection of the band for mass market use for Wi-Fi, under stable regulatory conditions, is important to BT and supports commercial investment decisions.

Wi-Fi operated at the current low power levels of 24dBm, on a licence-exempt basis, has a useful coverage range, and enables intensive frequency re-use, resulting in efficient use of the spectrum. We are concerned that much higher power use could impact negatively on availability of Wi-Fi spectrum in places with high density Wi-Fi hubs deployment.

It is unclear why the 5.8 GHz band already available for Wi-Fi at 4W, is insufficient.

If resources are constrained, BT would prefer Ofcom to prioritise addressing the need for high power mobile spectrum by UK national mobile network operators, over facilitating further access to the Lower 6 GHz band by higher power Wi-Fi.

3.2 AFC databases

Summary

BT is not currently interested in accessing the Lower 6 GHz band for higher power Wi-Fi, using an AFC database system. Nor is BT currently interested in operating such an AFC database system. We question whether enabling higher power Wi-Fi, under control of AFC database systems, should be a priority for Ofcom, given the uncertain demand and alternative technology solutions available.

Our priority for the Lower 6 GHz band is to ensure that it remains available, under current licence-exemption regulations, for our Consumer and Business hubs used with fixed broadband services, converged fixed and mobile services and provision of public hotspots. We are concerned that the proposed higher power Wi-Fi use, under control of an AFC database, could reduce the capacity available to other licence-exempt use of the band, where higher power Wi-Fi deployment may have negative effects on lower power users.

Question 2:

Are you interested in providing or developing AFC databases for use in the Lower 6 GHz band in the UK?

No, at present we do not plan to provide or develop AFC databases for use in the Lower 6 GHz band.

Question 3:

Do you have any views on the operational considerations of setting up and running AFC databases?

No comments.

Question 4:

Do you have any views on how we should manage the approval process for AFC databases and, in particular, whether we should rely on parts of the FCC process rather than requiring the whole process to be re-run in the UK?

If Ofcom did proceed with AFC databases, then we consider it important that multiple competing database operators are in place, to ensure fees charged reflect the costs of managing the spectrum, rather than the value of the spectrum itself, for which the database operator has not paid. This lower cost access to spectrum, is likely to lead to more use of the spectrum (assuming there is demand for such deployments, which is unclear).

We refer in that context to the past experience with establishing TV White Space database systems in the UK, which ultimately failed for a number of reasons. Those included, power limitations to avoid interference to TV reception, and the more costly TVWS user equipment compared to standard mass market mobile devices. Ofcom should consider carefully whether setting up an AFC database regime for the 6GHz band in the UK, is justified, in terms of demand by potential providers of services delivered by higher power Wi-Fi systems, rather than by interest in providing database systems.

Ofcom should consider lessons learnt from experience in the US and Canada in establishing AFC databases. Ofcom should however set its own criteria for how AFC database systems are required to operate in the UK, and should select or approve operators under its own process in the interests of fairness and transparency.

Question 5:

Please provide any other comments on our proposals for extending access to standard power Wi-Fi and outdoor use, including the overall approach, any details on technical parameters and the running of the AFC databases in this band.

No further comments.

4 Sharing between mobile and Wi-Fi

Summary

BT is concerned about Ofcom's proposal to authorise licence-exempt Wi-Fi use in the Upper 6 GHz band in 2025. This seems unnecessary given the currently scarce use of existing Lower 6 GHz band by Wi-Fi and no reasons to increase Wi-Fi access to this spectrum. Furthermore, to do so would involve significant risks of interference with future mobile networks, as early Wi-Fi equipment may be incompatible with sharing techniques that are yet to be standardised and implemented. Mobile interference with Wi-Fi or vice versa, would be a significant issue for consumers, mobile network operators and Ofcom.

Even if a shared use of the Upper 6 GHz band with Wi-Fi can in future be managed, we are concerned that prioritising a minimum of only 300 MHz for mobile use in urban areas, would be

inadequate. That would jeopardise the case for 6G network investments in the UK and diminish the quality of mobile services to UK consumers.

The importance of the Upper 6 GHz band for future mobile network use, including initial 6G deployments, has been highlighted by the GSMA / Connect Europe[6] and CEOs of leading European mobile operators and equipment vendors.[7] BT agrees with those positions.

Question 6:

Do you have any comments on our proposal to use a "phased" approach, or on the alternative to wait for European harmonisation?

If any sharing with Wi-Fi is introduced in the Upper 6 GHz band, BT considers that should wait for European harmonisation, and standardisation and implementation of cross technology signalling, or other measures to facilitate sharing of the Upper 6 GHz band.

BT does not support the phased approach, where Wi-Fi could have access to the Upper 6 GHz band now, and mobile networks in urban areas given priority to use the band later.

Our concern with the phased approach is that early Wi-Fi deployments on a licence-exempt basis may later interfere with, or be interfered by, future mobile network deployments. How exactly such interference may manifest and the likelihood of it occurring is currently unknown but inevitably would cause harm to consumers and businesses. It would be hard to retrospectively require legacy licence-exempt Wi-Fi systems to change their characteristics or implement future standards that may facilitate spectrum sharing. All this would have a negative impact on investments in Wi-Fi and mobile networks.

Question 7:

Do you have any comments on the above suggestion to manage any "legacy" Wi-Fi devices, or alternative suggestions?

BT is sceptical as to whether the suggested means of managing "legacy" Wi-Fi devices deployed in the Upper 6 GHz band, ahead of European harmonisation decisions, would in practice be feasible.

BT considers Ofcom's proposed ways to further reduce risks from first generation Upper 6 GHz "legacy" Wi-Fi devices, are impractical. For example, one option Ofcom is considering would be to require "legacy" access points to stop transmission on all or a portion of Upper 6 GHz frequencies from, say 2030, unless they have confirmed they can continue to do so. Ofcom proposes that could be achieved by requiring them to consult a simple web interface from time to time (e.g., every 6 months from 2030 onwards), to determine whether they can continue to use the Upper 6 GHz band. It is unclear how Ofcom would enforce such requirement. If a prioritised band split is adopted later, Ofcom says it could be possible to move "legacy" access points out of a mobile priority portion of the band.

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[6] https://connecteurope.org/sites/default/files/2025-01/Response_GSMA%20%20Connect%20Europe_RSPG%206G.pdf
[7] https://www.telefonica.com/en/wp-content/uploads/sites/5/2024/10/CEOs-Joint-Letter-on-6-GHz-band.pdf

BT is unclear as to how Ofcom would enforce such requirement to consult the web, and considers that once licence-exempt technologies are deployed it will be hard to cease or modify that use.

Question 8:

Do you have a view on the amount of spectrum that should be prioritised for Wi-Fi under the prioritised spectrum split option? Please provide evidence for your view.

BT considers none of the Upper 6 GHz band spectrum should be prioritised for Wi-Fi and do not believe it should be shared on an "equitable basis[8]" . We would similarly not support sharing the Lower 6 GHz band on such basis (if it were proposed) but would advocate continued use by licence-exempt Wi-Fi in that band, which is a key band for the newest Wi-Fi 7 deployments.

BT considers the Upper 6 GHz band should be prioritised for mobile, particularly in urban areas, as it will be needed for an economically viable future capacity growth and initial 6G deployments. Prioritising use of the Upper 6 GHz band for mobile networks would generate greater economic value than Wi-Fi use[9], and increase UK's ability to compete with other countries, and deliver benefits to UK consumers and businesses.

BT is a strong advocate of Wi-Fi technology, which complement our fixed broadband products and is important to our converged fixed mobile solutions, and for indoor mobile coverage. However, we do not see any compelling case that Wi-Fi needs additional spectrum beyond that recently made available in the Lower 6 GHz band. The argument that an extra 160MHz is needed so that Wi-Fi can utilise a second 320MHz channel, is questionable, given that studies and industry guides indicate that in busy public environments more efficient use and better coverage can be achieved with narrower channels.[10,11]. Similarly, uncoordinated deployments in domestic settings with 1Gbps FTTP fixed connections can be served with Wi-Fi connectivity, using existing Wi-Fi bands, especially when newer Wi-Fi generations are adopted.

On the contrary, for commercial mobile networks, the Upper 6 GHz band is the only credible band to support initial 6G deployments and provide 200 MHz per operator that would support operator investments in economically viable deployments. Limiting the part of the Upper 6 GHz band prioritised for mobile to between 300 - 540MHz (with 160 - 400 MHz dedicated to Wi-Fi[12]), will not support stated MNO requirements, or provide the spectrum solution needed to support UK's 6G ambitions and improve UK's competitiveness.

Ofcom states that it is open to prioritising any quantity of spectrum between 160 and 400 MHz for Wi-Fi, but notes that evidence points to a quantity of 320MHz. We ask Ofcom to reconsider

[8] Consultation document para 5.5.

[9] See https://www.gsma.com/connectivity-for-good/spectrum/wp-content/uploads/2024/09/GSMA_Mobile-Evolution-in-6-GHz.pdf

[10] Aruba Networks, Very High-Density 802.11ac Networks: Planning Guide Version 1.0 https://higherlogicdownload.s3.amazonaws.com/HPE/MigratedAssets/Aruba_VHD_VRD_Planning_Guide.pdf

[11] Cisco Meraki High Density Wi-Fi Deployments, April 2024 https://documentation.meraki.com/Architectures_and_Best_Practices/Cisco_Meraki_Best_Practice_Design/Best_Practice_Design_-_MR_Wireless/High_Density_Wi-Fi_Deployments

[12] Consultation document para. 5.49

its position on this issue, due to its potential detriment to future mobile network investments and the limited practical benefits to Wi-Fi users.

Ofcom presents no technical or economic analysis to support its position that Wi-Fi should be prioritised in part of the Upper 6 GHz band, or for the optimum quantity of spectrum that should be prioritised in terms of economic value. BT's view is that prioritising the Upper 6 GHz band for mobile and the Lower 6 GHz band for Wi-Fi, would be the most optimal scenario.

We note that Ofcom indicates[13] that consideration of the adjacent 7125-7250 MHz for mobile at the ITU WRC-27, could potentially lead to an additional 125 MHz of mobile spectrum contiguous with Upper 6 GHz (making about 400 and 600 MHz of contiguous spectrum prioritised for mobile depending on the scenario). However, BT has concerns with that approach, given the UK has so far not supported this band for mobile in the European preparations for the WRC-27, and that existing services, notably receiving satellite Earth stations in the UK, might place onerous constraints on deploying mobile networks.

Question 9:

Do you have any comments on our plan for a "phase 1" when Wi-Fi will be introduced?

BT does not support the phased approach for Wi-Fi introduction in any form. Nor do we consider (if a phased approach is implemented) that indoor Wi-Fi sharing with outdoor mobile to be a viable method of shared use of the Upper 6 GHz band. This would require power limitations on mobile that would limit the ability to serve customers indoors and would have adverse impact on investment in networks, and thus on consumers and businesses.

Question 10:

One variation on "phase 1" would be to only authorise Wi-Fi in client devices to "seed" the market. Would you have any views on this, or suggestions for other variations?

Ofcom has identified a potential variant where they would only include client Wi-Fi devices during phase 1, not access points. This would not allow immediate use of the band, but it would allow manufacturers to "seed" the market with client devices such as phones and laptops. Access points would be authorised later once the European harmonised technical requirements are clear.

We agree with Ofcom that only allowing client Wi-Fi devices in phase 1, and access points later when European harmonised technical requirements are clear, is not a sensible approach.

BT agrees with Ofcom's proposal not to consider that variation further, and considers Ofcom should wait for more clarity on the European harmonised technical requirements for use of the Upper 6 GHz band .

Question 11:

Do you have any comments on our plan for a "phase 2" when mobile will be introduced?

BT welcomes Ofcom's proposal to prioritise mobile use in the Upper 6 GHz band in urban areas.

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[13] Consultation document para. 5.13.

Question 12:

Do you have a view on the amount of spectrum that should be prioritised for mobile under the prioritised spectrum split option? Please provide evidence for your view.

At least 600 MHz should be prioritised for high power mobile use, excluding any guard bands that may be required to manage any adjacent band interference issues. This could provide 200 MHz per national mobile network operator, allowing efficient deployments using the widest channel bandwidths being standardised for 6G in the Upper 6 GHz band in 3GPP.[14] Identifying all 700 MHz of the Upper 6GHz band for mobile use would be consistent with this requirement and with the WRC-23 identification of the Upper 6 GHz band for IMT.

Although the growth rate of mobile traffic has progressively slowed in recent years, the absolute volume of mobile traffic continues to steadily grow and requires additional capacity and thus spectrum. BT is aligned with the mobile industry view[15] that additional spectrum is needed before the end of the decade to meet growth in traffic demands and to support future initial 6G deployments.

Question 13:

Do you have any evidence or views about the geographical extent of mobile networks' likely deployment in Upper 6 GHz?

The Upper 6 GHz band is of particular interest to deliver capacity requirements in busy urban areas, including future 6G capabilities. It could be deployed on existing macro cellular base station grids to give additional capacity, with similar coverage to current 3.5GHz band deployments if sufficiently high-power levels are allowed. It would also be of interest where it may be a cost-effective means to deploy required mobile network capacity.

Question 14:

Do you have any comments on our proposed phased approach to authorisation of both Wi-Fi and mobile in the Upper 6 GHz band?

BT does not support the proposed phased approach to authorisation of both Wi-Fi and mobile in the Upper 6 GHz band, whereby Wi-Fi equipment , not adapted to share spectrum with mobile, is deployed in advance of mobile network deployments in urban areas. BT considers that this early Wi-Fi introduction would involve risk of interference with mobile. This could harm the experience of mobile and/or Wi-Fi users and potential MNO investments in the Upper 6 GHz band, including for development of 6G. This would not be in the interests of UK consumers and businesses.

Ofcom should not use a phased approach with early introduction of Wi-Fi and instead wait and align with European harmonisation decisions and the availability of equipment that conforms to standards that may facilitate possible shared use of the Upper 6 GHz band where mobile use might not be prioritised.

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[14] https://www.nokia.com/blog/6g-to-be-optimized-for-upper-mid-band-spectrum
[15] The Importance of 6 GHz to Mobile Evolution - Spectrum

5 Authorising Wi-Fi use of the Upper 6 GHz band

Summary

BT does not advocate authorisation of Wi-Fi in the Upper 6 GHz band, especially in advance of the European harmonisation on possible shared use of the band. We are concerned with consumer harm through interference and the negative effect that would have on willingness to invest in mobile networks in the Upper 6 GHz band. Ofcom should await European harmonisation before deciding on shared use of the Upper 6 GHz band.

Question 15:

Do you have any comments on our proposal to not include very low power portable devices in the Upper 6 GHz band at this stage, but to keep this under review?

BT agrees with Ofcom that very low power (VLP) outdoor Wi-Fi devices and standard power Wi-Fi should not be permitted in the Upper 6 GHz band, to avoid unnecessary complication or interference with incumbent services or future commercial mobile services in the Upper 6 GHz band.

Question 16:

Do you have any comments on our proposal to authorise the use of low power indoor Wi-Fi access points and client devices to use 6425–7125 MHz?

For the reasons previously stated, BT considers that the Upper 6 GHz band should be prioritised for commercial mobile networks use, particularly in urban areas. Due to the risk of interference with future mobile deployments, and to MNOs' willingness to invest in Upper 6 GHz band, Ofcom should not authorise the use of low power indoor Wi-Fi access points and client devices to use the 6425-7125 MHz band. To do so, ahead of European harmonisation, and of development and implementation of sharing mechanisms in standards would be premature. Particularly given risk of future interference , lack of evidence of justified spectrum demand and economic benefits of making extra Wi-Fi spectrum available, and risk of negative impact on commercial mobile use.

Question 17:

Do you have any comments on the proposed technical conditions?

No comments.

Question 18:

Do you have any comments on the proposed VNS draft?

No comments.

Question 19:

Do you have any suggestions for an appropriate mechanism for enhanced sensing, or comments on the proposed solution above?

This topic has been extensively discussed in the CEPT ECC PT1 group, and the draft ECC Report 366.[16] It is noted within the draft report that the *"report considers various detection techniques which can be potentially used by MFCN and/or WAS/RLAN to attempt to mitigate these effects however these would need to be further specified, tested and standardised, and, from a practical implementation perspective their effectiveness and efficacy in mitigating all potential interference scenarios is as yet unproven."*. This is an important point and supports our view that it would be premature to introduce Wi-Fi in the Upper 6 GHz band before such matters are fully understood and settled.

In our view, it is premature for the UK to select any particular mechanism or band split/sharing option ahead of completion of technical work and harmonisation decisions taken on a European basis. BT questions the necessity to rush ahead of European harmonisation and potentially create difficulties for the future in terms of possible interference that could negatively impact future consumer experience or willingness to invest in national mobile networks in the Upper 6 GHz band, resulting in loss of benefits to consumers and the UK economy. At the very least, practical investigations should be undertaken to better understand potential interference issues and how those could affect consumer experience before moving ahead with early introduction of Wi-Fi, in contemplation of a future shared use of some of the Upper 6 GHz band with high power mobile networks.

Question 20:

Do you agree with our proposal to restrict Wi-Fi from transmitting in the 6650-6675.2 MHz band to protect the radio astronomy service? Please provide any technical evidence to support your view.

Yes, we agree that Wi-Fi, authorised on a licence-exempt non-interference non-protected basis, would have potential to interfere with radio astronomy service, as its use in the vicinity of radio astronomy sites, would be hard to prevent given the licence-exempt nature of its use.

In the case of mobile networks, where the base station locations are known and can be controlled, and user devices operate on a 'listen before talk' basis, coordination with radio astronomy, if required, should be feasible.

Question 21:

Do you agree with our assessment of Wi-Fi coexistence with existing users of the band? If not, please provide details.

Yes, BT agrees with Ofcom's assessment.

[16] ECC Report 366 on Feasibility of a potential shared use of the 6425-7125 MHz frequency band by MFCN and WAS/RLAN https://cept.org/files/2099/Draft%20ECC%20Report%20366%20.docx

6 Coexistence of mobile with other users of the Upper 6 GHz band

Summary

Coexistence of mobile networks in the Upper 6 GHz band with other existing users is feasible with appropriate coordination measures and sharing conditions, other than for fixed links deployments in or near "high density" areas.

Question 22:

Do you have any evidence about the costs to operators of moving fixed links in and around "high density" areas (such as urban centres) to other bands?

BT uses the Upper 6 GHz band for fixed microwave links in the remoter parts of the UK, almost exclusively in Scotland. We do not have links deployed in the "high density" areas where fibre connections are generally available, and would be a preferred means of connectivity.

Given our rural use, we do not have evidence on the costs of moving Upper 6 GHz fixed links that are in or near "high density" areas.

BT supports Ofcom's view that the Upper 6 GHz fixed links in more rural areas could be allowed to remain and be protected from interference by coordinating mobile network deployments around these existing links. Given the path length of these links and the nature of the local terrain and available infrastructure, we do not consider it viable technically or commercially to move to other bands. Retaining these links would represent most optimal and efficient use of the Upper 6 GHz spectrum in the areas where the links are deployed, and their continued availability is essential for delivery of digital voice and broadband services.

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Question 23:

Do you have any comments on our initial assessment of our likely approach to coexistence between future mobile use and current users in the Upper 6 GHz band?

BT agrees with Ofcom's assessment of the coexistence of mobile networks with current users in the Upper 6 GHz band. We note that sharing with fixed satellite services was successfully concluded at the ITU WRC-23. There is ongoing work in the CEPT ECC PT1 group looking at coexistence of mobile with current users that may provide further useful information.

7 Next steps

Question 24:

Do you have any other comments on our policy proposals or any of the issues raised in this document?

We would suggest that two further areas of work are undertaken before Ofcom reaches final conclusions on how to proceed. These are:

d. To undertake or consider available results of practical tests to prove the viability of sharing rather than relying solely on theoretical studies;
e. To conduct economic analysis to further understand the costs and benefits of shared use, especially where sharing reduces the value of the spectrum relative to exclusive use, including the implications for 6G rollout in UK.

We further suggest that Ofcom awaits the conclusion of the technical harmonisation work underway in the CEPT in response to the EC Mandate, and eventual European Decisions before authorising new uses of the Upper 6GHz band in the UK.

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