

Deutsche Telekom AG reply to Ofcom consultation “Expanding access to the 6 GHz band for mobile and Wi-Fi services”

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Group Public & Regulatory Affairs
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1 Introduction

Deutsche Telekom (DT) welcomes the opportunity to comment on Ofcom's public consultation on "Expanding access to the 6 GHz band for mobile and Wi-Fi services". Although DT is not a market participant in the United Kingdom, we would like to provide our view on the Ofcom approach to address the use of the upper 6 GHz band because of the ongoing work in CEPT to harmonize its usage across Europe, which might be significantly influenced. Therefore, we provide comments on dedicated sections of this consultation which we found relevant to the CEPT process.

Regarding all matters not addressed in this reply, we support the position paper by GSMA.

2 Benefits of a shared approach

In section 5.3 Ofcom states „we believe that shared use of Upper 6 GHz will bring the greatest overall benefits to citizens and consumers“. In section 5.8 Ofcom states "We consider it likely that the benefit from shared use of the band between both mobile and Wi-Fi would be larger than the benefit provided from either alone". These beliefs do not seem to be based on evidence.

No analysis of socio-economic benefits is cited. Instead, the document "Mobile and Wi-Fi in Upper 6 GHz¹" is cited as reference. In this document Ofcom argues that a band split would be possible, because mobile would use the band outdoors, whereas WiFi would use the band indoors. Conversely, in section 5.15 of this document, Ofcom argues that an indoor-outdoor split is not feasible.

Section 5.4 states, that "there are some differences in where and how mobile and Wi-Fi would like to use the band". On the contrary, in the document "Mobile and Wi-Fi in Upper 6 GHz" Ofcom states that "there will be places where both mobile and Wi-Fi would be likely to use the spectrum intensely, such as dense urban areas like central London".

We propose that a solid socio-economic benefit analysis should be undertaken as the basis for a decision on access to the upper 6 GHz spectrum band.

3 Options for Sharing

Section 5.11 discusses prioritized access by WiFi to 160 to 400 MHz of the spectrum, without mentioning a guard band between mobile and WiFi. Assuming a guard band between 40-60 MHz, in the worst case only 240 MHz would be available for mobile networks. We expect a need of 200 MHz contiguous spectrum per operator for additional 5G capacity and later introduction of 6G for mobile networks. The Ofcom proposal would allocate less spectrum to mobile networks than is available in the 3,4 – 3,8 GHz band.

Ofcom also states "that evidence we have seen could point to 320 MHz" without providing such evidence in the consultation.

¹ [Mobile and Wi-Fi in Upper 6 GHz](#), Ofcom 21. May 2024

Regarding the 7125–7250 MHz range that is up for discussion at WRC-27, we note substantial resistance of administrations in CEPT to make this band available for IMT. Therefore, it is not appropriate to assume this 125 MHz of spectrum to be available after 2027.

The presented concept of a “prioritized band split” seems to be based on overly optimistic assumptions. If WiFi gets opportunistic access to the mobile part of the spectrum, the potential for interference would discourage investments by mobile operators. Only exclusive access with predictable lack of interference would encourage the investments expected by the mobile industry.

We agree with Ofcom that an indoor-outdoor approach for sharing seems unfeasible, either due to interference to WiFi with full power mobile networks, or due to undue constraints on mobile transmit power, which would devalue the band for mobile networks completely. We wholeheartedly agree with the statement in section 5.19, that Ofcom would make no decision regarding the band before the outcome of European discussion becomes clearer. A unilateral approach by the UK would only increase the already high risk of fragmentation of the band.

4 Phased approach

In our opinion the proposed phased approach is unfeasible from a regulatory, technical and practical point of view.

From a regulatory perspective, Ofcom effectively proposes to decouple its decision on the upper 6 GHz band from European harmonization in CEPT. Even though Ofcom acknowledges that the UK may align itself with a European approach in the proposed phase 2, it is possible that the proposed phase 1 creates irreversible facts. It seems unlikely for example, that a license exempt allocation to WiFi could be retroactively changed in case Europe and UK chose a different usage scenario, e.g. a different band split. It would also cause a dangerous precedent for CEPT as a whole, in which countries are encouraged to forego European harmonization for a unilateral approach.

From a technical perspective we do not believe that “Wi-Fi’s detect-and-avoid mechanisms will mean that Wi-Fi should cease to transmit when it detects mobile”. Studies² in ECC PT1 have clearly shown that the energy detection threshold of WiFi is higher than the required signal level for mobile reception. Therefore, a multitude of WiFi access points would cause significant interference to mobile signals. Additionally, any proposed mitigation technique requires a change of either 3GPP or IEEE standards or both, and subsequent acceptance by vendors and customers.

From a practical perspective, it seems unlikely that an adequate ecosystem of WiFi equipment would form for the UK market alone, given the already small market for WiFi equipment in Europe compared to the world.

² [ECC Report 366, currently in public consultation](#)

Additionally, there is a high risk of incompatible WiFi equipment flooding the UK market and congesting the upper 6 GHz for a decade or more. Ofcom acknowledges that devices entering the market from 2025 will not have additional sensing mechanisms but would be replaced before substantial mobile deployments. The assumption of a duty cycle of 5-7 years for WiFi APs seems overly optimistic. A recent study by the GSMA³, finding a significant number of WiFi 4 APs still in the market and a very slow uptake of even WiFi 6/6E, seems to indicate a much larger duty cycle. Ofcom notes “[legacy devices] may have an increased risk of interference compared to later devices with an enhanced sensing mechanism”, but does not qualify, let alone quantify, the damage to mobile networks.

Section 5.45 discusses an option for legacy WiFi devices to query a database to determine if they can continue to use the upper 6 GHz band. This logic seems flawed, since WiFi 7 devices available today have no implementation of this functionality and will not have it before irrevocably flooding the market.

We therefore conclude that no authorization must be given to legacy devices in 2025, because these would cause irrevocable harm to later mobile deployments and would effectively mean a general authorization for WiFi only.

5 Technical conditions

In chapters 6 and 7 potential technical conditions for WiFi and mobile regarding co-existence with incumbent users are discussed. We view these proposals as premature. EC has given a mandate to CEPT to study co-existence and the discussion on these issues has just started. Harmonized technical conditions may be available before the introduction of mobile networks in the upper 6 GHz bands according to Ofcom’s plans. But they would certainly not be available before the general authorization of WiFi, potentially leading to further fragmentation of the European ecosystems.

6 Summary

In summary, we ask Ofcom to consider the following when deciding on access to the upper 6 GHz band:

- Any decision on use of the band must be based on a solid socio-economic analysis
- Ofcom should not decouple the UK market from a European harmonization of the band
- There should be no phase 1 allocation to WiFi before a European harmonization due to the risk of flooding the market with incompatible devices and causing irrevocable harm to a potential later allocation to mobile networks

³ [Mobile Evolution in 6 GHz](#), GSMA September 2025