Huawei response to the Ofcom public consultation: Expanding access to the 6 GHz band for mobile and Wi-Fi services

Summary

We thank Ofcom for the opportunity to comment on this important consultation.

The Upper 6 GHz band is the only feasible spectrum opportunity for the launch of 6G mobile networks in Europe and the UK towards the end of this decade. As such, we consider that the entire 700 MHz of the Upper 6 GHz band should be authorised for use by full-power macro-cellular mobile (IMT) networks.

We consider that the introduction of Wi-Fi in the Upper 6 GHz would not result in optimal outcomes for the UK. We are not aware of any evidence that would support the need to open up the Upper 6 GHz band for Wi-Fi at this time, with several studies and field tests having indicated that currently available frequencies in the 2.4 GHz, 5 GHz, and Lower 6 GHz bands are sufficient to provide multi-gigabit connectivity with Wi-Fi; enough to address the most advanced forms of audio-visual services envisaged in the short to medium term.

That said, we also consider that a spectrum strategy needs to be in place that foresees ways to address the enhanced connectivity requirements of key radio technologies, including Wi-Fi, which cannot be anticipated in the short to medium term. We believe that the installation of multiple Wi-Fi access points in premises will be important to address the key bottleneck of Wi-Fi, which is coverage, and that the availability of high bands will also play an important role in the delivery of Wi-Fi capacity in the longer term.

We consider that Ofcom's proposed "phased" approach for the early authorisation of low-power indoor Wi-Fi use in the Upper 6 GHz band would introduce a substantial risk of interference to mobile networks in the future. This is because the approach relies on the future availability of signalling/sensing mechanisms to enable shared use by Wi-Fi and mobile networks; yet recent studies at CEPT indicate that potential signalling/sensing mechanisms would have low efficacy (a high probability of sensing false negatives). Furthermore, a sharing framework which requires Wi-Fi equipment to suddenly vacate the Upper 6 GHz band in the presence of mobile networks would have negative economic and – perhaps more importantly – public policy implications which must not be ignored.

We are concerned that shared use of the Upper 6 GHz band by Wi-Fi and mobile networks will significantly impede the deployment of 6G in the UK.

We note that DSIT/Ofcom have not defined any national targets for the required data rates of Wi-Fi and mobile networks in the short-, medium- or long-term time scales. Absent such targets, it is not possible to assess whether any benefits from authorisation of Wi-Fi use in all or part of the Upper 6 GHz band would outweigh the costs of degraded performance of mobile networks due to the inevitable interference which sharing would bring.

We recommend that Ofcom further engages on the spectrum needs of both Wi-Fi and IMT/6G in meeting national targets prior to any decisions on shared use of the Upper 6 GHz. In this respect, two key questions to address might include the following:

- Can Wi-Fi address its UK connectivity targets without the Upper 6 GHz band? And how?
- Can 6G be introduced in the UK without the Upper 6 GHz band? And how?

Huawei's comments in response to Ofcom's questions

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.

No comment.

Question 2: Are you interested in providing or developing AFC databases for use in the Lower 6 GHz band in the UK?

No comment.

Question 3: Do you have any views on the operational considerations of setting up and running AFC databases?

No comment.

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?

No comment.

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 comment.

Question 6: Do you have any comments on our proposal to use a "phased" approach, or on the alternative to wait for European harmonisation?

We consider that the entire 700 MHz of the Upper 6 GHz band should be authorised for use by mobile (IMT) networks, and that the introduction of Wi-Fi to the Upper 6 GHz band would not result in optimal outcomes for the UK, be this via a "phased" approach or otherwise. It is important to ensure that the 700 MHz of the Upper 6 GHz band is available to operators for **full-power macro-cellular mobile networks**, unhindered by sharing with licence-exempt Wi-Fi operations in the band.

We consider that Ofcom's proposed phased approach for the early authorisation of low-power indoor (LPI) Wi-Fi use in the Upper 6 GHz band would introduce a substantial risk that the band would **not be usable for 6G** mobile networks. This would be due to **co-channel interference** to mobile services – both indoor and outdoor – from an indeterminate number of licence-exempt Wi-Fi equipment.

This is because Ofcom's phased approach relies on future European harmonised radio signalling/sensing mechanisms for co-channel shared use of the band by Wi-Fi and IMT in the Upper 6 GHz. However, the **feasibility** of such technical mechanisms is **by no means certain**. In fact, studies of these mechanisms at CEPT – undertaken by the mechanisms' own proponents – have clearly indicated that these would have low efficacy, and would inevitably result in mutual interference between the two technologies, and in **inefficient use** of the Upper 6 GHz band.

Even if existing studies and trials had demonstrated that a radio signalling/sensing mechanism might be promising (which they do not), we consider that any shared use should only be authorised once the relevant **technical requirements** and **compliance tests** for the mechanism are **specified by ETSI** in

the European Harmonised Standard for the band, so that equipment can be **demonstrated to conform** with these requirements prior to being placed on the UK market.

In summary, it is not clear how Ofcom can be confident that its proposed "phased" approach can be successful when the future **availability and feasibility** of the required signalling/sensing technology is subject to **great uncertainty**.

Furthermore, we are not aware of any evidence that would support the need to open up the Upper 6 GHz band for Wi-Fi at this time: several **studies and field tests** have shown that currently available frequencies in the **2.4 GHz**, **5 GHz**, and **Lower 6 GHz** bands are **sufficient** to provide **multi-gigabit connectivity** with Wi-Fi. This is more than enough for even the most advanced forms of audio-visual services envisaged in the short to medium term (even if the market for Wi-Fi-only VR devices had taken off, and the Metaverse had fully materialized).

For any given key wireless technology, including Wi-Fi, we firmly believe that a **spectrum strategy** needs to be in place that foresees ways to address traffic growths and enhanced connectivity requirements which cannot be anticipated in the short to medium term. As for Wi-Fi, we believe that the installation of multiple access points (APs) in premises will be important to address the key bottleneck of Wi-Fi, which is **coverage**, and that the availability of **high bands** will also play an important role in the delivery of Wi-Fi **capacity** in the long term. See also our response to Q8.

Ofcom states: *"5.8 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"*. It is unclear how Ofcom has reached such a conclusion. As far as we are aware, DSIT/Ofcom have not defined any **national targets** for the required **data rates** of Wi-Fi and mobile networks in the short-, medium- or long-term time scales. Absent such targets, it is **not possible to assess** whether any **benefits** from authorisation of Wi-Fi use in all or part of the Upper 6 GHz band would outweigh the **costs** of degraded performance of mobile networks due to the inevitable interference which sharing would bring.

Ofcom states: *"5.12 We remain open to any quantity of spectrum between 160 and 400 MHz to prioritise for Wi-Fi, but note that evidence we have seen could point to 320 MHz with the remainder prioritised for mobile, and that European harmonisation discussions will be a significant consideration in our decision"*. Again, it is unclear how Ofcom has arrived at the conclusion that Wi-Fi demands 160 to 400 MHz of the Upper 6 GHz band. See also our response to Q8.

Should Ofcom decide to allow Wi-Fi in the band, it is imperative that licence-exempt LPI Wi-Fi equipment should not be permitted to operate in the band until it is demonstrated – with a reasonable degree of confidence – that such use would not materially impact mobile network operations, both indoors and outdoors. Allowing any deployment of LPI Wi-Fi equipment **without a robust technical sharing mechanism** would significantly **limit the utility** of the band for **5G-A/6G**. As a result, mobile network operators might avoid using the band, which could slow down the deployment of 6G in the UK.

Unless robust technical mechanisms for spectrum sharing between licence-exempt Wi-Fi and licensed mobile networks are developed, standardised, and their requirements and relevant test procedures harmonised, so that equipment can be properly **tested for compliance** prior to being placed on the market, it is not possible to ensure successful coexistence between Wi-Fi and mobile networks in the same geographical location without **detrimental impacts** to **both technologies**.

Question 7: Do you have any comments on the above suggestion to manage any "legacy" Wi-Fi devices, or alternative suggestions?

As acknowledged by Ofcom, Wi-Fi devices that are proposed to be authorised as Phase-1 in 2025 to use the entire Upper 6 GHz band ("legacy" devices) will not be equipped with the ability to implement the **as-yet-to-be specified** cross-technology **signalling/sensing mechanisms** which might be harmonised in Europe in the future, and that these would result in interference to future mobile networks

in the band. Ofcom's conclusion is aligned with our own studies which indicate a substantial risk of interference from LPI Wi-Fi devices and indoor/outdoor mobile user equipment[1].

We consider that Ofcom's proposed approach of simply relying on the 5- to 7-year **natural churn** of such legacy Wi-Fi equipment authorised in Phase-1 is **not a viable approach** to manage the posed risk of harmful interference to future mobile deployments and 6G in the Upper 6 GHz.

Furthermore, Ofcom's notion that suitable cross-technology signalling/sensing mechanisms will eventually be introduced to ensure that **Wi-Fi equipment stop transmissions** in the Upper 6 GHz band in the future **do not account** for:

a) the **uncertainty** in the **efficacy** and **feasibility** of future cross-technology signalling/sensing mechanisms (see also our responses to Q6 and Q19), and

b) the **unacceptable** impact this would have on Wi-Fi users who will by that time be accustomed to availability of the Upper 6 GHz band and would **suddenly face the unavailability** of the band.

Ofcom states: *"5.41 Early authorisation will allow manufacturers to start including the Upper 6 GHz band in client Wi-Fi devices straight away, thus seeding the market with products that can make use of the band as soon as access points become available"*. It is not entirely clear why this would be the case, given that it is almost certain that any client Wi-Fi device which uses the Lower 6 GHz band is most likely already capable of operating in the Upper 6 GHz band.

Again, we consider that licence-exempt LPI Wi-Fi equipment should not be permitted to operate in the Upper 6 GHz band unless and until it is demonstrated with a reasonable degree of confidence that such use does not materially impact mobile network operations in the future, both indoors and outdoors.

In summary, we consider that Ofcom's proposed approach would negatively impact the incentives for investment in 6G infrastructure in the UK, noting that the upper 6 GHz will be the **key band** to support the **introduction of 6G** (primary 6G band) in the vast majority of countries globally. Perspectives relating to economic growth and investment are notably absent from Ofcom's consultation, and should be accounted for to reflect the broader economic and technological implications of spectrum policy decisions.

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.

We consider that the **2.4 GHz**, **5 GHz** and **Lower 6 GHz** bands are **sufficient** for the provision of **multi-gigabit connectivity** by Wi-Fi in residential dwellings and enterprises, and that combined with the use of multiple APs in premises where needed, these bands are more than enough to meet consumer demand for the foreseeable future.

Ofcom states: *"5.49 Under a prioritised spectrum split, we remain open to any quantity of spectrum between 160 and 400 MHz to prioritise for Wi-Fi but note evidence we have seen could point to 320 MHz"*. It is not clear which evidence Ofcom is referring to.

Field tests[2] by COMTEL in 2024 have indicated that by using the **5 GHz** and **Lower 6 GHz** bands alone, and with channel bandwidths of **80** and **160 MHz**, a Wi-Fi AP can readily deliver a throughput of

[1] See ECC PT1(24)CG6GHz008, Huawei, "Aspects for consideration on the feasibility of shared use of the 6425-7125 MHz frequency band by MFCN and WAS/RLAN," March 2024 (updated).

[2] See ECC PT1(24)156A1, Comtel, "Wi-Fi indoor connectivity tests – Comtel, Lazise (Italy), 21 February to 15 March 2024," September 2024.

around **1.5 Gbit/s** in an **interference-free** room. The same tests have demonstrated that in **highly interference-limited densely populated urban apartment** environments, again with channel bandwidths of **80** and **160 MHz**, and with the deployment of 2, 3 or 4 Wi-Fi APs per apartment – where needed – data rates of **1.7**, **2.4** or **4.5 Gbit/s** could be delivered in each apartment, respectively. The results of these field tests are broadly aligned with the results of our own **simulations**[3] of Wi-Fi capacity in the 5 GHz and Lower 6 GHz bands in dense urban environments, with **multi-AP** Wi-Fi residential dwelling and enterprise deployments enabled by commercially available easy-to-install fibre-to-the-room (**FTTR**) technologies.

Given the above achievable data rates, and noting that an UHD video stream requires a data rate of up to around 20 Mbit/s, we **do not envisage** that Wi-Fi would require **access** to the upper 6 GHz band in the **short**- to **medium-term**. Should demand for additional spectrum for Wi-Fi emerge in the **longer term**, frequencies in the **mmWave** range are far more suited for such **short-range** communications and can effectively convert each room into an **interference-free ultra-high-capacity cell** capable of delivering speeds of many tens of Gbit/s if necessary.

We understand that Ofcom's proposal to prioritise at least 160 MHz for Wi-Fi is partly driven by the notion that this – in combination with the 480 MHz already available in the Lower 6 GHz – would allow 2 x **320 MHz** Wi-Fi channels (see also Table 6.1 of the consultation). However, we consider that there is **little or no demand** for the speeds which can potentially be delivered by **320 MHz channels** (see Comtel tests above). Furthermore, the **low frequency-reuse factors** implied by the use of 320 MHz channels would result in **high inter-AP interference** which in some circumstances can even result in **lower speeds** than **80** or **160 MHz** channels.

The Upper 6 GHz is the only feasible spectrum opportunity[4] for the launch of 6G in the UK towards the end of this decade, and could possibly be extended by an additional 125 MHz in 7.125 – 7.250 GHz (under sturdy for WRC-27).

Given the above, we consider that **no spectrum should be prioritised for Wi-Fi** in the Upper 6 GHz band and that the availability of the entire upper 6 GHz band without undue restrictions for mobile services is vital for the introduction of 6G in the UK, and that this is a key prerequisite to enhance UK's competitiveness in relation to leading markets globally.

Question 9: Do you have any comments on our plan for a "phase 1" when Wi-Fi will be introduced?

See our responses to Q6 and Q7 on our concerns regarding Ofcom's plans for Phase-1, including its material risk of harmful interference to future mobile networks in the Upper 6 GHz band, the introduction of an uncertain interference environment for the introduction of 6G in the band, and its negative impact on incentives for investment in mobile network infrastructure in the UK.

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?

As explained before, we consider that Ofcom's proposed Phase-1 approach would introduce a substantial risk of interference to mobile networks in the future, given that recent studies at CEPT have indicated that potential signalling/sensing mechanisms would have low efficacy (a high probability of sensing false negatives). Furthermore, a sharing framework which requires Wi-Fi equipment to

[3] See ECC PT1(24)CG6GHz016, Huawei, "Wi-Fi performance in dense-urban apartments," April 2024.

[4] The Upper 6 GHz is the only possible new frequency band that can support the introduction of 6G in Europe. This is supported by the negative position that Member States of the European Union and CEPT took at WRC-23 in relation to the potential IMT identification of the 7-8 GHz frequency range, due to strategic military use and other satellite and scientific usages of the band in Europe.

suddenly vacate the Upper 6 GHz in the presence of mobile networks would have **negative economic** and – more perhaps more importantly – **public policy implications** which must not be ignored.

Given the above fundamental concerns, we consider that the proposed variation to Phase-1 of limiting early authorisation to client Wi-Fi devices only **would not materially mitigate the risks**. The notion that this variation would "allow manufacturers to seed the market with client devices such as phones and laptops" for operation in the Upper 6 GHz is also not fully clear, given that Wi-Fi equipment already deployed in the Lower 6 GHz band can in any case also operate in the Upper 6 GHz band by design.

Question 11: Do you have any comments on our plan for a "phase 2" when mobile will be introduced?

The Upper 6 GHz band is expected to be the key band to support the introduction of 6G in Europe (just as 3.5 GHz was for 5G). This is due to the radio propagation characteristics in this band which allow the **cost-effective delivery** of both high capacity and wide area coverage, especially in urban and suburban densely populated environments.

We consider that the entire Upper 6 GHz band should be authorised for use by mobile networks and awarded under **similar licensing conditions** as the **3.5 GHz** band in the UK and with a maximum base station EIRP of **83 dBm/(100 MHz)** or more, in order to allow the reuse of the existing macro-cellular base station sites at 3.5 GHz. We consider that a licensing approach similar to the 26 GHz band would not be appropriate for Europe's primary 6G band, and would not incentivise mobile operators to investment in network infrastructure in this band.

Without the Upper 6 GHz band, mobile operators will not be able to offer 5G-A/6G performance and services in a cost-effective manner citywide. Over time, this will impact the ability for UK citizens to take full advantage of the socio-economic benefits of mobile networks.

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.

We consider that the **entire** Upper 6 GHz spectrum should be made available for use by **macro-cellular mobile networks**, and that this should also be extended with an additional 125 MHz in the 7125 – 7250 MHz range through the WRC-27 process. See also our responses to earlier questions.

We also note that the Radio Spectrum Policy Group (RSPG) has recently released a report on its 6G strategic vision for the European Commission which states:

> *"Operators indicate that the spectrum need in upper 6 GHz band would be 200 MHz for each operator with conditions that allow deployment with standard macro base station power levels. Mid band spectrum providing wider channels of at least 200 MHz per operator, e.g. in 6 GHz, is key to provide full blown 5G SA as a basis to implement 6G, and to achieve national and international digitisation goals."*

We further note the letter of 7th May from 12 major European mobile operators addressed to European regulators which states:

> *"With escalating demands on current spectrum capacity and with future services including 6G on the horizon, it is critical that the entirety of the upper 6 GHz band (6.425-7.125 GHz) is made available to mobile networks."*

Question 13: Do you have any evidence or views about the geographical extent of mobile networks' likely deployment in Upper 6 GHz?

On the basis that the Upper 6 GHz band is expected to be the key band for the introduction of 6G, we consider that the band should be awarded under **similar licensing conditions** as the **3.5 GHz** band in the UK and with a maximum base station EIRP of **83 dBm/(100 MHz)** or more, in order to allow economically viable mobile network deployments through the reuse of the existing macro-cellular base station sites at 3.5 GHz.

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?

We consider that the **socio-economic benefits** generated from use of Upper 6 GHz should be carefully considered before deciding on whether the spectrum should be authorised for use via licences for mobile networks, or via licence-exemption for Wi-Fi, or through a sharing approach (phased or otherwise). To this end, it is important that DSIT/Ofcom clearly set out their views with regards to **national data rate targets** in the UK, to be delivered by each of mobile networks and Wi-Fi, as a **foundation for justifying** the need for the authorisation of the two technologies individually or on a shared basis (if needed). Such an analysis is currently missing.

As described in our responses to earlier questions, we have concerns with Ofcom's proposed phased approach for the introduction of Wi-Fi in the Upper 6 GHz band, as this would allow deployment of LPI Wi-Fi equipment **without a robust technical sharing mechanism in place**, and would significantly limit the utility of the band for mobile networks (5G-A/6G). A phased approach would also remove a key driver for the Wi-Fi industry (which we are a member of) to develop and agree on technical sharing mechanisms as there would be very **little incentive** to do so, with Wi-Fi being required to vacate the band upon the detection of mobile networks. Consequently, there is a substantial risk of one industry sector dictating access to the band at the expense of another and inevitably delaying benefits to citizens and consumers as it would be very **difficult to remove licence-exempt Wi-Fi devices** from the band. It is also worth mentioning the **public-policy issues and sensitivities** which would surround any regulatory framework based on the **removal of Wi-Fi** equipment from the Upper 6 GHz band to make way for mobile networks in the future.

It is also critically important that any envisaged sharing mechanism be **harmonised across Europe** in order for UK citizens to benefit from **economies of scale** in this very important band. Accordingly, it is essential that, if Ofcom decides to proceed with any form of **early authorisation** in this band ahead of Europe, Ofcom can ensure that it is possible for such authorisation to be **readily and promptly reversed** should there be any misalignment with a harmonised solution (e.g., if a technical sharing mechanism does not ultimately emerge). We consider that such reversal is not possible with Ofcom's current proposal for the early deployment of licence-exempt Wi-Fi equipment.

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?

As described in our responses to earlier questions, we have serious concerns with regards to Phase-1 authorisation of LPI Wi-Fi equipment, and accordingly consider that the introduction of VLP Wi-Fi equipment would **further increase** the **risk of mutual interference**[5] with mobile networks in the Upper 6 GHz band, add to the uncertainties for the future of this band for 6G, and exacerbate the negative impact on incentives to invest in mobile infrastructure.

[5] See ECC PT1(25)071-A14, GSMA, "Impact of interference from WAS/RLAN VLP devices to MFCN uplink and downlink in the same band," April 2025. This technical paper highlights the high risk of interference to mobile networks from even very low-power (VLP) Wi-Fi equipment. Note that interference would be substantially greater in the case of low-power indoor (LPI) Wi-Fi equipment.

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?

See our responses to Q6. Q7, Q9, Q10, Q12, and Q14 on our reservations with regards to the introduction of LPI Wi-Fi equipment in the Upper 6 GHz.

Question 17: Do you have any comments on the proposed technical conditions?

No comment.

Question 18: Do you have any comments on the proposed VNS draft?

No comment.

Question 19: Do you have any suggestions for an appropriate mechanism for enhanced sensing, or comments on the proposed solution above?

Ofcom states that *"5.39 […] requiring mobile to broadcast a Wi-Fi-like beacon is our strong preference, and we will advocate for this in the European harmonisation discussions"*, *"6.11 […] it would be preferable to adapt mobile base stations to transmit signals that can be readily understood by Wi-Fi devices"*, and that one study discussed at CEPT *"6.12 […] suggests a practical implementation, using existing Wi-Fi standards. The mobile base station and/or handset would transmit IEEE 802.11bc uplink (UL) frames with Higher Layer Payload (HLP)"*.

We have discussed the efficacy of the 802.11bc signalling/sensing mechanism in question with three other mobile network equipment vendors and two other Wi-Fi equipment/chip vendors who have been involved in the CEPT PT1 work item on shared use of the Upper 6 GHz band. Our main takeaway from these discussions is aligned with the conclusions of our own studies[6] which have indicated that the proposed mechanism can result in a **high probability** of **failed sensing/detection** (false negatives) and so is **not a reliable approach** for shared use between mobile and Wi-Fi and would result in an uncertain interference environment for 6G in the UK.

The above is also aligned with our more general view that where the locations of at least one of the sharing networks is known, then **database-assisted** spectrum sharing mechanisms are in general far more effective and robust compared to radio signalling/sensing mechanisms.

We also consider that a sharing solution based on 801.11bc signalling/sensing may **contradict** the principle of **technology neutrality**, in the sense that it would require WAS/RLAN equipment which do not operate based on IEEE technologies to decode technology-specific IEEE signals.

We note that Ofcom states: *"5.40 […] even where changes to the Wi-Fi access point are necessary in the future, we do not think this should prevent us from moving ahead with authorising Wi-Fi in the meantime. Under our currently preferred mechanism (requiring mobile to broadcast a Wi-Fi-like beacon), this is likely to only need a software upgrade to Wi-Fi equipment"*. We consider that this is not strictly correct, in the sense that it does not account for the fact that – while the introduction of new sharing messages/instructions in the future may well be achievable through software updates – the actions which Wi-Fi (and other WAS/RLAN) equipment would be required to undertake in response to the

[6] See ECC PT1(24)CG6GHz082, Huawei, "Comparative study of the performance of cross-technology signalling mechanisms based on 3GPP SSB and IEEE 802.11bc signals, in the context of sharing between MFCNs and WAS/RLANs in the upper 6 GHz band," December 2024. The study concludes that with a maximum MFCN BS e.i.r.p. of 82 dBm/(80 MHz), WAS/RLAN APs would be able to successfully decode the 802.11bc signals transmitted by MFCN BSs in around only 45% of indoor locations within an MFCN cell. With the BS e.i.r.p. reduced to 57 dBm/(80 MHz), the probability of successful detection reduces to around 30%.

received instructions would need to be standardised and the equipment **tested for compliance** prior to the placement on the market.

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.

No comment.

Question 21: Do you agree with our assessment of Wi-Fi coexistence with existing users of the band? If not, please provide details.

No comment.

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?

Ofcom may wish to consult a 2023 report by the Czech Republic on the cost of clearing fixed links in the Upper 6 GHz[7].

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?

We consider that Ofcom's initial assessment of the likely approach to coexistence between future mobile use and current users in the Upper 6 GHz band is broadly along the right lines. We consider that the protection of RAS in the Upper 6 GHz band should account for **site-specific** propagation effects and RAS antenna characteristics – as well as the RAS **usage patterns in time** – in order to avoid unduly restrictive technical conditions for the introduction of mobile networks in the band.

We re-iterate our recommendation that the entire Upper 6 GHz band be authorised for use by mobile networks and with a maximum base station EIRP of **83 dBm/(100 MHz)** or more, in order to allow the reuse of the existing macro-cellular base station sites at 3.5 GHz.

Question 24: Do you have any other comments on our policy proposals or any of the issues raised in this document?

As described earlier, we are concerned that shared use of the Upper 6 GHz band by Wi-Fi and mobile networks will significantly impede the deployment of 6G in the UK, in a band which is expected to be the primary band for 6G. We recommend that Ofcom further engages on the spectrum needs of both Wi-Fi and IMT/6G in meeting national targets prior to any decisions on shared use of the Upper 6 GHz. In this respect, two key questions to address might include the following:

- Can Wi-Fi address its UK connectivity targets without the Upper 6 GHz band? And how?
- Can 6G be introduced in the UK without the Upper 6 GHz band? And how?

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[7] The report can be downloaded here: https://ctu.gov.cz/studie-ke-spektru
English executive summary on pages 9-10.