Your response

Question	Your response
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.	Cambium Networks provides telecommunications equipment for many installations currently in use in the UK, plus worldwide. We help supply internet connectivity for locations such as schools, housing, hospitality, large public venues, stadiums, public Wi-Fi hotspots, retail, warehouses, caravan parks, farms, and enterprise networks. We have equipment capable of short range links <1km both indoor and outdoor, and longer range links >100km outdoor, which will be improved by use of the 6 GHz band. In fixed wireless installations, the deployments can be both Point-to-Multipoint (PMP) or Point-to-Point (PTP). We provide hardware for both sides of the link - the Access Point and the Subscriber Module / Client. Here are 3 brief case studies of example deployments: Forest Academy, NetPoint, Dakota Hotels, with more on our website here. 3 examples of Cambium's products that already support the 6 GHz band are: ePMP 4600 (Outdoor fixed wireless PTP+PMP), PMP 450v (Outdoor fixed wireless PTP+PMP), X7-35X (Indoor RLAN Wi-Fi 7) We broadly agree with Ofcom's suggestions presented in this consultation and we support the enablement of more 6 GHz usage for indoor RLAN and outdoor Standard Power, and it will result in more deployments like the above examples to provide faster, more reliable internet for consumers. Fixed wireless and RLAN is easy to install and maintain, and is a low-cost solution particularly in the low-density areas compared to fibre and mobile. This can drive economic growth and enhance the quality of life for residents in these regions.

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Question 2: Are you interested in providing or developing AFC databases for use in the Lower 6 GHz band in the UK?	Cambium is not a provider/developer of AFC, but we will use and connect with an AFC database to enable our equipment to use the 6 GHz band. Our equipment is already tested and certified in US + Canada to work with AFC in 6 GHz, in modes of Standard Power Access Points, Standard Clients, and Fixed Clients. We agree with the proposal to let industry provide the AFC database, not Ofcom. The AFC providers already servicing Cambium and other manufacturers for 6 GHz in the US + Canada will certainly be interested in providing their AFC database solution in the UK, and continued interoperability with these same AFC vendors is crucial.
Question 3: Do you have any views on the operational considerations of setting up and running AFC databases?	There were many teething problems the US + Canada to get AFC working as best as possible. 3 major considerations we suggest in its implementation are: 1. Allow a certified professional installer to verify that the equipment has location X with antenna specifications Y and GPS accuracy Z for calculating incumbent protection more accurately. If the uncertainty in GPS accuracy looks too large/incorrect, the installer can override it to state the exact co-ordinates of the equipment. X, Y, Z data can be signed by the installer with their certificate and timestamp. 2. Not to apply simple omnidirectional antenna calculations for how far the AFC equipment is located from incumbents. Many 6 GHz equipment use directional antennas which will create less interference outside of the intended direction of transmission. The installer can enter the azimuth of the equipment and antenna pattern. This assists devices with high gain but small beamwidth. 3. The AFC provider can input the incumbents' exact antenna patterns and clutter data, to obtain the most accurate simulations.

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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?	Please aim to follow your page 25, Section 4.38 comment where you consider allowing test data and reports to FCC Part 15E or RSS-248 specifications, plus using the Wi-Fi Alliance AFC Test Harness. Especially since there is no ETSI test standard for AFC yet. Page 24 regarding AFC specifications looks good. Using FCC ID as the device ID is acceptable, because some AFC code structure uses the FCC ID as an identifier, and all equipment using the UK's AFC system will already be using the US's AFC system with an FCC ID.
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.	Please see the answer to question 3.
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 agree with the phased approach. Most new Wi-Fi equipment already has the hardware capability to enable the upper 6 GHz Wi-Fi channels.
Question 7: Do you have any comments on the above suggestion to manage any "legacy" Wi-Fi devices, or alternative suggestions?	Section 5.45 seems awkward to implement, and legacy devices will still have decent sensing mechanisms required by compliance to ETSI EN 303 687 and in the 802.11be protocol as outlined in section 5.44, but the idea is good.
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.	Only that Wi-Fi does need the appropriate spectrum availability to enable the full 320 MHz channels as you outlined in page 8's channel raster using Option 1 ideally.
Question 9: Do you have any comments on our plan for a "phase 1" when Wi-Fi will be introduced?	We agree with the phased approach. The spectrum split, rather than indoor/outdoor split, is preferable and will lead to fewer issues with interference.

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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?	This seems an unwise idea and would negatively impact the number of citizens being provided the best internet connectivity. We do not see any benefits for consumers from authorising Access Points a different time after clients. Both at once is preferable, plus it seems easier for Ofcom to implement at the same time.
Question 11: Do you have any comments on our plan for a "phase 2" when mobile will be introduced?	No comment.
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.	Only that Wi-Fi does need the appropriate spectrum availability to enable the full 320 MHz channels as you outlined in page 8's channel raster using Option 1 ideally. This will facilitate the highest throughput possible like >1Gbps.
Question 13: Do you have any evidence or views about the geographical extent of mobile networks' likely deployment in Upper 6 GHz?	No comment.
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 agree with the phased approach. The spectrum split, rather than indoor/outdoor split, is preferable and will lead to fewer issues with interference.
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?	No comment.
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?	We agree with the proposal and technical requirements suggested.
Question 17: Do you have any comments on the proposed technical conditions?	We agree with the proposal and technical requirements suggested.

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Question 18: Do you have any comments on the proposed VNS draft?	The VNS looks good, and the attention to mitigating interference to astronomy in 6.6 GHz is appreciated as always.
Question 19: Do you have any suggestions for an appropriate mechanism for enhanced sensing, or comments on the proposed solution above?	No comment.
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, this is appreciated to protect radio astronomy services. Some of the e-Merlin sites are within 20km of a largely populated areas - mainly the Lovell telescope to Macclesfield / Manchester, and the Cambridge telescope. These areas could not realistically adhere to any separation distances applied, besides the blanket frequency restriction you propose.
Question 21: Do you agree with our assessment of Wi-Fi coexistence with existing users of the band? If not, please provide details.	Yes this looks correct.
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?	No comment.
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?	No comment.
Question 24: Do you have any other comments on our policy proposals or any of the issues raised in this document?	We appreciate the effort and diligence that Ofcom have gone to here to assess the impact, coexistence, and benefits of the 6 GHz band. We also suggest that Ofcom frequently discuss with the FCC and ISEDC for their guidance and experience in their own implementations of the 6 GHz band.