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.	We are interested in extending the standard power Wi-Fi be deployable outdoors in the Lower 6 GHz band. At the moment we are not in a position to provide details of expected deployment.
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.	Nothing specific to comment but we generally prefer alignment to majority countries where already available or international harmonization.
Question 6: Do you have any comments on our proposal to use a "phased" approach, or on the alternative to wait for European harmonisation?	Whilst we understand the reluctance to sit and wait for European harmonisation, the phased approach also has difficulties of its own. The rationales provided in the consultation paper for transition to an undefined future plan in the second phase still has much uncertainty. This includes e.g. managing interference from early distributed legacy Wi-Fi APs to IMT and an additional impact to Wi-Fi devices. We also are concerned that VLP is left outside as an "orphan" when considerations are done towards shared use between Wi-Fi and IMT.

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Question 7: Do you have any comments on the above suggestion to manage any "legacy" Wi-Fi devices, or alternative suggestions?	We have concerns on how to manage Wi-Fi transmissions from devices that are already proliferated and established in the U6 GHz band in the case of a band split. How would you ensure that a "legacy" device consults a web interface?
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.	No comment.
Question 9: Do you have any comments on our plan for a "phase 1" when Wi-Fi will be introduced?	Ofcom states as its intent to provide as much certainty as possible to manufacturers, operators and users. We rather see the "phase 1" approach on releasing Wi-Fi to all of Upper 6 GHz band causing uncertainty.
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?	We agree with Ofcom that Wi-Fi devices "seeding" the market without access points has few benefits to argue for it. It is also important to recognize that many smartphones can also operate as access points which may have no mechanism of stopping transmitting when IMT were to enter the band. We disagree with any variation of the phase 1 where Wi-Fi devices enter the entire Upper 6 GHz band. Due to the concerns of coexistence afterwards an exclusive band split of MFCN and WAS/RLAN is better than such a phased approach. We believe that, one variation could be to immediately give e.g. 160 MHz (as in one of Ofcom's options) at the lower edge of the band to Wi-Fi devices before European harmonisation, and allow at least VLP to operate both indoors and outdoors. We see a clear benefit here for avoiding additional burdens such as implementation, cost and energy consumption aspects.
Question 11: Do you have any comments on our plan for a "phase 2" when mobile will be introduced?	To the extent that "phase 2" implies a possibility of shared used between IMT and Wi-Fi, we still have serious concerns about its feasibility. As we explain in Q7 above, it must be ensured that "legacy" Wi-Fi APs truly vacate the band once "phase 2" begins. We don't expect

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	to see Wi-Fi devices compliant with any enhanced sensing etc. anticipated in the CEPT harmonisation until after 2027. A phased approach where no certainty before 2027 is present causes uncertainty to manufacturers. At Samsung we see this uncertainty both at the Wi-Fi and IMT side.
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.	No Comment.
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 see the phased approach bringing uncertainty to both Wi-Fi and IMT and urge Ofcom to consider alternatives such as assigning a lower portion of the Upper 6 GHz band exclusively to Wi-Fi (see Q10), and leave the rest without access to Wi-Fi until the eventual CEPT outcome is clear.
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?	The variation we outline in Q10 could allow also VLP use in e.g. 160 MHz (as in one of Ofcom's options) at the lower part of the band for exclusive WAS/RLAN before European harmonisation. We see great benefits in allowing VLP use both indoors and outdoors as long as coexistence with incumbent use is ensured.
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?	As we outline in the responses above, this neither goes far enough to bring certainty to Wi-Fi, whilst introducing uncertainty on future IMT deployments.
Question 17: Do you have any comments on the proposed technical conditions?	We generally prefer alignment to majority countries where already available or international harmonization.

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Question 18: Do you have any comments on the proposed VNS draft?	We generally prefer alignment to majority countries where already available or international harmonization.
Question 19: Do you have any suggestions for an appropriate mechanism for enhanced sensing, or comments on the proposed solution above?	Any enhanced sensing mechanisms are currently only under study. Furthermore, those studies have focused mostly on the interference impact between IMT and Wi-Fi, which is not sufficient upon considerations such as feasibility on implementation, cost, standardisation effect for eco system and so on comparing with benefit from shared use. Therefore, we are concerned on currently considered examples for enhanced sensing because the status of any such mechanisms is too immature to apply to the market at the moment.
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?	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	We respectfully disagree with the proposed shared use for the Upper 6GHz band through the phased approach,

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any of the issues raised in this document?	but as an alternative we can support exclusive band split between MFCN and WAS/RLAN.

Samsung response on "*Expanding access to the 6 GHz band for commercial mobile and Wi-Fi services*"

Samsung Electronics welcomes the opportunity to provide its thought on the Ofcom "Expanding access to the 6 GHz band for commercial mobile and Wi-Fi services".

Lower 6GHz band

Samsung supports extending Wi-Fi access to out-door with standard power. In addition, we generally prefer alignment to majority countries where already available or international harmonization.

Upper 6GHz band

As we all are aware, Samsung has a variety of product lines and adopts a variety of wireless access technologies such as Wi-Fi, Bluetooth, and UWB as well as mobile communication to expand the various connectivity of these product lines or other products such as car. Therefore, Samsung also needs much spectrums for not only mobile but also unlicensed bands to serve much and various data to support so many applications in product lines. At the same time, Samsung has also recognized that available spectrum is limited to provide to market. In this sense, Samsung fully understands that Ofcom has much difficulty or dilemma in spectrum management for the upper 6GHz which both mobile and Wi-Fi sectors strongly request to enhance their services.

However, Samsung would prefer exclusive use independently from one another rather than shared use scheme with both MFCN and WAS/Wi-Fi because Samsung is of views that additional availability cannot be sufficiently secured considering additional burdens such as implementation, cost, computation, energy consumption and so on. ECC PT1 pursued a number of studies for more than a year to evaluate the feasibility of a potential shared use of the frequency band 6 425-7 125 MHz by MFCN and WAS/RLAN. Most of these studies focused on the interference mitigation, but did not sufficiently analyse and review how much gain the proposed shared use mechanism can achieve comparing to the drawback of additional implementation, cost and operation. Samsung sees the stability of connectivity services and their ecosystem as a very important factor in reducing the cost to both manufactures and consumers.

Some cross technology signalling mechanism to enhance detection have been proposed at ECC PT1. They can achieve better performance in mitigating or avoiding interference, but the probability to

activate a WAS/RLAN AP is very low – at the level of only a few percent. For example. Study C1/D4 provide this site-general study examines the detectability of MFCN downlink signals by WAS/RLAN APs. Under standard conditions (i.e. no sharing mechanisms), WAS/RLAN APs are unable to consistently detect the MFCN downlink within a 300 m MFCN cell with 83 dBm/100 MHz for the SSB assessment (to ensure consistent detection of the MFCN SSBs so that Wi-Fi enhances the detection capability to avoid interference between MFCN and Wi-Fi. In case of Indoor coverage by MFCN base station, Study D10 further indicates that MFCN BS transmits with 82dBm/100MHz e.i.r.p. and if WAS/RLAN equipment can successfully decoded the transmitted SSB plot signals in 98% and 99% of indoor locations with an MFCN cell as well as 100% of outdoor locations

With respect to the phased approach considered by Ofcom, Samsung has a concern it will create a lot of uncertainty in future on the Upper 6 GHz. We had read and understood that Ofcom provide a rationale for this approach. Nevertheless, we have a genuine concern that, for example, under a typical 5-7 year Wi-Fi AP's replacement cycle, unclear applicability and feasibility for requirement of functions to consult a simple web interference from time to time, will slow MFCN BS deployment. Those uncertainties make it difficult for manufactures to develop products because they don't know exactly what they will need to update on products already provided to the marketplace. In effect, manufactures have no choice but to wait until finalizing the rule or policy is completed. Furthermore, unique usage criteria or additional implementation requirements outside of IEEE/ETSI standards for both/either mobile and/or Wi-Fi in UK causes difficulty to meet changing requirements for product manufactures.

Therefore, Samsung respectfully disagrees with the proposed shared use for the Upper 6GHz band through the phased approach. This runs the risks of cementing the spectrum usage on Upper 6 GHz band without any possibility to change it in future after further CEPT harmonisation has taken place. On the other hand, we can support exclusive band split between MFCN and WAS/RLAN.