Consultation response form

Your response

Question	Your response
Question 1: Do you have any comments on our proposals to gather additional antenna parameters, and would you prefer Ofcom to specify a small number of antenna pattern 'envelopes' or for users to provide details of the	Highlands and Islands Enterprise (HIE) is supportive of Ofcom's proposal requesting stakeholders to provide additional information on their planned deployments (specifically antenna details) in future SAL applications so this can be included in the coordination process. We believe

specific antenna parameters in use for Ofcom to assess? Please provide reasons for your views.	giving details on antenna tilt and directionality for co-ordination calculations will allow stakeholders greater flexibility when applying for spectrum via the Shared Access framework as well as demonstrating to Ofcom the ability of the antenna equipment deployed to reduce interference on a case-by-case basis within the specific coverage areas being targeted.
Question 2: Do you have comments on the suggested approach to enable user-led coordination in certain circumstances?	HIE agrees with the process outlined by Ofcom to enable greater user-led coordination and allow stakeholders applying for spectrum via the Shared Access framework the ability to resolve interference issues via written agreements with other potential spectrum sharers.
Question 3: Do you have any comments on our proposal to increase the power level of our Low Power product by 3dBm in the 3.8-4.2 GHz band?	HIE is supportive of Ofcom's proposal to allow higher operating powers for equipment transmission in the 'Rural Low Power' and 'Urban Low Power' SAL products and to further support investment for solutions to deliver wider coverage and capacity using the minimum amount of radio equipment needed. While this is a positive step, especially for those located in urban environments, HIE believe Ofcom can do more to further increase the operating powers across your other SAL products, including the 'Rural Medium Power' category applicable to the 3.8-4.2 GHz band to further ensure cost-effective deployments are possible in those areas deemed Very Hard to Reach (VHTR). The Highlands and Islands of Scotland are home to some of the most remote and sparsely populated areas of the UK. While the region has benefitted from major investments in digital infrastructure over recent years and is set to benefit further from programmes such as the Scottish Government's R100, DSIT's Project Gigabit and the Shared Rural Network (SRN) programmes, there remain significant gaps in connectivity across our VHTR communities that still need to be addressed. There are many reasons why these connectivity 'not spots' persist, including sparse population density and isolated island communities, lack of existing telecoms infrastructure available for reuse, limited access to affordable backhaul

	and unaffordable access to existing operators' masts/ towers (for radio-based deployments). In addition, the revenue generating opportunity is less in rural areas compared to urban areas for the infrastructure deployed with operating costs also being significantly higher. These issues, combined with the higher capital investment which is required to reach VHTR results in a significant adverse impact on all aspects of the business case for investment by telecoms operators into VHTR communities across Scotland. While Fixed Wireless Access (FWA) or Radio Fed Fibre to the Premises (e.g. with a fixed wireless link providing the 'backhaul' connection) can provide connectivity this is currently inhibited by Ofcom's approach to spectrum allocation where a UK wide 'one-size fits all' provision is made. We consider this inappropriate for those VHTR areas where it has already been proven commercially unviable to deploy traditional fibre networks and which are deemed too costly to be supported under other UK and Scottish Government initiatives. We believe that Ofcom should consider a geographical carve out for spectrum policy in VHTR areas and further increase the power level of the medium SAL in the 3.8-4.2 GHz band. We also call on Ofcom to consider further review of other technical limitations imposed on this band, many of which were highlighted following the 5G Testbed and Trials programme to further aid the deployment of networks and level-up communities in VHTR areas. This could include designating specific geographies as 'high density VHTR' which would allow a high power n77 license to be granted (or at least considered) in more remote rural areas across the Highlands and Islands, as well as permitting an increase in tower height from the current 10m given that many VHTR areas have more geographic barriers such as hills / mountains etc and are therefore much more difficult terrains for wireless providers to provide coverage. We would also welcome Ofcom reviewing their policy regarding one license application per mast site. These changes would not only mean FWA links could provide longer reach, greater coverage, and increased capacity to support ultrafast and gigabit connectivity into VHTR areas but it would also enable suppliers to target more potential customers, generate greater revenue and reduce the amount of mast sites and radio equipment needed. This is

	turn would make the business case for investment more attractive. While HIE recognises the issues highlighted by Ofcom relating to protecting other licensed users and conserving the availability of spectrum in areas for future applicants and technologies, we feel Ofcom is being too cautious given the risk of interference with other UK Broadband assignments, fixed links or satellite earth stations is significantly lower in VHTR areas than urban and other rural environments. In VHTR communities it is also very unlikely there will be significant demand for multiple SALs. Therefore, we would like to see Ofcom coordinate with the Department for Science Innovation and Technology (DSIT) following their recent consultation on '*Improving Broadband for Very Hard to Reach*'[1]' and consider a more targeted approach to spectrum policy, including when applying for spectrum via the Shared Access framework, to enable greater connectivity to VHTR communities.
	No comment
Question 5: Do you agree with our proposals to assume synchronisation between users, and coordinate base station to terminal instead of base station to base station in the 3.8-4.2GHz band? If no, please explain how other measures could increase sharing of the band.	No comment
Question 6. Please indicate whether you support our preferred option of coordination at -88 dBm/20 MHz (based on I/N of + 3dB, at 1.5m) or a more conservative alternative of -91 dBm/20 MHz (based on I/N of 0dB at 3m), with reasons for your view.	No comment
Question 7: Do you agree with our proposals for an increase in BEL in 3.8-4.2GHz? If no, are there alternatives which you consider	No comment

[1] Digital Connectivity: Consultation on Improving Broadband for Very Hard to Reach (publishing.service.gov.uk)

could better achieve similar results?	
Question 8: Do you agree with our proposal that adjacent band protection for Shared Access users is in future limited to considering only the first 5 MHz above and below UK Broadband assignments?	No comment
Question 9: Do you agree with our assessment that, in circumstances where localised shortages of spectrum have occurred, pricing can be used to influence requested spectrum amounts?	While HIE agrees with Ofcom's assessment that demand for Shared Access in the 3.8-4.2 GHz band is likely to increase overall, we are concerned that the proposed fees in 3.8- 4.2 GHz band will further discourage investment in VHTR areas across Scotland. As one of the most important use cases for the 3.8-4.2 GHz band is providing wireless broadband connectivity to premises and business in VHTR communities where deploying a fibre network is commercially unattractive, we are concerned that the changes in fee structure for those requesting a rural medium power license in the 3.8-4.2 GHz band will further reduce the attractiveness for suppliers to invest in deploying FWA networks in the Highlands and Islands. HIE considers affordability to be a key driver for enabling market innovation and providing localised rural FWA deployments and therefore any potential changes to licensing fees in 3.8-4.2 GHz band, especially for those applying for 60 MHz channels or higher will further compound the economic challenges of trying to close the digital divide and the levelling up of VHTR communities. Issues in delivering connectivity across the Highlands and Islands which we have highlighted in our response to Question 3 will be further exacerbated if the spectrum licensing costs for FWA or Radio Fed Fibre to the Premises are also increased. While we note Ofcom's suggestion that for many use cases significantly less spectrum will be needed for the n77 band such as 40 to 50 MHz channels, many FWA deployments are based on 80 to 100 MHz bandwidth in order to provide end users with higher data rates including gigabit connectivity. Based on the proposed changes to the fees for the rural medium power product across the 3.8-4.2 GHz band this will result in licensing costs doubling. In addition, the current licensing process for medium power licenses in the 3.8-4.2 GHz band requires one license application per mast site. With most FWA deployments requiring multiple mast sites, the proposed revised licensing fee changes when applied across multiple mast sites will

	mean significant rises in annual costs for suppliers which will not been accounted for within their original business plans. While Ofcom has recognised this issue and is exploring options to address it, we believe the fee mechanism being proposed will further deter suppliers from building new wireless networks in VHTR areas. In VHTR areas where suppliers are already operating there is a risk that increased licencing costs will be passed on to customers resulting in them having to pay more for broadband connectivity. While HIE acknowledges Ofcom's statement that users can mitigate the impact of increased licensing costs by reducing the bandwidth they require we believe this goes against UK Government's ambition to drive gigabit broadband to at least 85% of premises by 2025 and over 99% by 2030 and risks certain suppliers deploying solutions using 40 to 50 MHz bandwidths which would not provide gigabit capable connectivity. Not only would this mean UK Government would potentially need to redouble their efforts and the level of public subsidy via programmes such as Project Gigabit to reach the gigabit coverage targets, it will also further negatively impact on the ability of those living and working in VHTR areas to be able to access gigabit capable connections. In summary, while HIE understands that there is a risk spectrum demand will exceed supply in some geographic locations in the 3.8-4.2 GHz band (such as urban) we do not believe this will be the case in VHTR areas and we would encourage a different approach to be adopted for these areas. In particular, we do not see a need to move from the existing license fee structure for those deployments which are located in VHTR areas and require medium power in order to achieve higher coverage along with the combined higher bandwidth channels needed for ultrafast or gigabit speed throughputs.
Question 10: Do you agree that we should take measures to reflect the impact of bandwidth, power levels and urban/rural location in our pricing approach for the 3.8-4.2 GHz band? Do you think there are other factors we should be taking into account?	Please see response to Question 9.
Question 11: How do you consider the illustrative prices would impact your spectrum requirements and future	Please see response to Question 9.

deployment plans in the 3.8-4.2 GHz band? Please provide evidence in support of your view.	
Question 12: Do you have any comments on our proposals to clarify the circumstances in which exceptions are available, the tests we will apply, and how this supports user flexibility outside our overarching rules?	As per our response to Question 3 above, HIE believes Ofcom should consider introducing further changes to its spectrum policy across the Shared Access Framework targeted specifically at VHTR communities. This could also include expanding the exception process to include requests for medium power licenses in VHTR areas and allowing license applications from suppliers looking to build and operate networks in VHTR areas to deviate from the standard SAL license condition (either antenna height and/or power transmission) where there are significant associated social and economic benefits. Given the proposed improvements to the Shared Access framework being suggested within this consultation such as better dialogue between stakeholders over mitigation factors to prevent interference and improved information in the coordination process, HIE believe this can be expanded further to introduce an exception process for the 3.8-4.2 GHz bands for areas categorised as VHTR.
Question 13: Do you agree with our overall approach based around refining our existing coordination framework for Shared Access, whilst monitoring future opportunities for more user led and outcomes led coordination where evidence suggests it would be of benefit?	Please see response to questions 3 and 12
Question 14: Do you agree with our assessment of the potential impact on specific groups of persons?	No comment
Question 15: Do you agree with our assessment of the potential impact of our proposal on the Welsh language? Do you think our proposal could be formulated or revised to ensure, or increase, positive effects, or reduce/eliminate any negative effects, on opportunities to use the Welsh language and treating the Welsh language no less favourably than English?	No comment

Question 16: Do you have any other comments on the proposals set out in this document?	None

Please complete this form in full and return to sharedaccessresponses@ofcom.org.uk.