

Your response

Question	Your response
<p>Section 3 –Spectrum use by the PMSE sector in the UK</p> <p>Question 1: What are your views on how our processes work - for example our online booking system, turnaround times, and event coordination. Do you think the current approach works well? How could we improve it?</p>	<p>Confidential? - Y / N ✓</p> <p>A basic price guide for hiring site specific frequencies would be very useful</p>
<p>Section 4 - PMSE historic trends</p> <p>Question 2: Do you have any comments on how we have analysed and characterised wireless microphone and IEM demand, or suggestions for alternative ways of characterising this demand?</p>	<p>Confidential? - Y / N ✓</p>
<p>Question 3: Do you have any comments on how we have analysed and characterised wireless video demand, or suggestions for alternative ways of characterising wireless video demand?</p>	<p>Confidential? - Y / N ✓</p>

Question	Your response
<p>Section 5 - Future trends and opportunities</p> <p>Wireless audio</p> <p>Drivers of demand</p> <p>Question 4: What factors have driven changes in the demand for audio PMSE applications, specifically for:</p> <ul style="list-style-type: none"> a) the increased use of coordinated wireless microphones and IEMs, particularly the peak number of simultaneous assignments used at the largest events? b) the slight decline in the number of national wireless microphone licences (UHF channel 38 and VHF)? Has the extent of use of these licences changed, and if so why? c) the declines in talkback, fixed audio links and ADS licences? 	<p>Confidential? - Y / N</p> <p>All three options (A, B, C) apply.</p> <p>The expectations of wireless audio & The amount of channels has increased Over the last 10 years. Using cabled solutions over wireless has become the exception, with wireless solutions becoming the expected norm</p>
<p>Question 5: What factors could drive further changes in the demand for audio PMSE applications in the future, and what will this mean for future demand, specifically for:</p> <ul style="list-style-type: none"> a) coordinated wireless microphones and IEMs, particularly the peak number of simultaneous assignments used at the largest events? 	<p>Confidential? - Y / N</p> <p>Again, all three answers apply (A, B, C)</p> <p>The increase in social media "content" Has spurred the increase in lower cost Wireless systems. Removing more Spectrum from professional users Will make the job of managing this Increasing demand ever more difficult.</p>

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<p>b) national wireless microphone licences (UHF channel 38 and VHF)?</p> <p>c) talkback, fixed audio links and ADS licences?</p>	
<p>Question 6: Do you agree that, given the trends, we are right to focus on wireless microphones/IEMs?</p>	<p>Confidential? - Y / N</p>
<p>Changes in the take-up of bands already available</p> <p>Question 7: What factors have driven the take-up of different bands for wireless audio? What are the barriers to greater use of the DME band?</p>	<p>Confidential? - Y / N</p>
<p>Question 8: What actions could enable greater take-up of the DME, DECT and licence exempt bands in the future?</p>	<p>Confidential? - Y / N</p>
<p>Changes in spectrum availability</p> <p>Question 9: Which potential additional bands might be suitable for wireless audio applications, particularly microphones and IEMs at the largest events and venues?</p>	<p>Confidential? - Y / N</p> <p>For fixed-site systems, many are locked into frequencies already, the cost of replacing those systems will be a great difficulty, especially with the cost of the newer systems</p>
<p>Question 10: To what extent do the characteristics of different audio applications drive their requirements for spectrum - for example particular requirements for latency, resilience or capacity?</p>	<p>Confidential? - Y / N</p> <p>All three of those are of equal importance.</p>

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<p>Changes in efficiency of spectrum use</p> <p>Question 11: What changes in spectrum use (technology, working practices, different bands, etc) have enabled audio wireless growth to be accommodated to date, particularly the increased use of wireless microphones and IEMs at the largest events and venues in the context of reduced UHF spectrum availability?</p>	<p>Confidential? - Y / N</p> <p>The move from analogue based systems With high power demands, to digital Varients, using less power & with Less harmonics across the spectrum.</p>
<p>Question 12: What technologies are currently available or are being developed which can improve audio spectrum efficiency in the future, particularly in the use of wireless microphones and IEMs at the largest events and venues?</p>	<p>Confidential? - Y / N</p> <p>The combination of digital (narrow harmonics transmitters), reception filtering, & onboard timecode recording.</p>
<p>Question 13: Are there any barriers to adopting more efficient technologies for audio applications, particularly for wireless microphones and IEMs at the largest events and venues? What could industry do and what could Ofcom do to facilitate greater use of those technologies?</p>	<p>Confidential? - Y / N</p> <p>The cost of professional systems has Become incredibly high, servicing Multiple channel counts is a Challenging investment.</p>
<p>Question 14: What changes to working practices and spectrum planning could improve audio spectrum efficiency in the future, particularly in the use of wireless microphones and IEMs at the largest events and venues?</p>	<p>Confidential? - Y / N</p>
<p>Question 15: Are there any barriers to adopting working practices that could enable more efficient use of spectrum by audio applications, particularly for wireless microphones and IEMs at the largest events and venues? What could industry do and what could Ofcom do to facilitate those</p>	<p>Confidential? - Y / N</p> <p>The development of a common system for scanning & planning frequency use containing manufacturer provided data on different kit used, making it simple & accessible to scan that live data, & then place frequencies using the efficiency of an app.</p>

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<p>efficiencies?</p>	
<p>Wireless video</p> <p>Drivers of demand</p> <p>Question 16: What factors (such as more complex events and use of higher resolution equipment) have driven the demand for wireless video bandwidth, in particular for:</p> <ul style="list-style-type: none"> a) the increased bandwidth required for the largest sporting events such as Formula 1 at Silverstone and The Open Championship? b) the bandwidth required for nationally important state events such as The Coronation? c) the slow growth or decline in bandwidth used at horse racing fixtures? 	<p>Confidential? - Y / N</p>
<p>Question 17: What factors could drive further changes in the demand for wireless video bandwidth in the future, and what will this mean for future demand, in particular for:</p> <ul style="list-style-type: none"> a) the bandwidth required for the largest sporting events like Formula 1 at Silverstone and The Open Championship? b) the bandwidth required for nationally important state events such as The Coronation? c) the bandwidth used at horse racing fixtures and other 	<p>Confidential? - Y / N</p>

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major sporting events?	
<p>Potential news bands</p> <p>Question 18: What factors have influenced the degree of take-up of existing bands used by wireless video applications, particularly the growth in take-up of the 7 GHz band?</p>	Confidential? - Y / N
<p>Question 19: Which potential additional bands might be suitable for video PMSE applications, particularly at the largest events and venues?</p>	Confidential? - Y / N
<p>Question 20: To what extent do the characteristics of different video applications drive their requirements for spectrum - for example particular requirements for resilience or capacity?</p>	Confidential? - Y / N
<p>Changes in efficiency of spectrum use</p> <p>Question 21: What technologies are currently available or are being developed which can improve wireless video spectrum efficiency in the future?</p>	Confidential? - Y / N
<p>Question 22: Are there any barriers to adopting more efficient technologies for wireless video? What could industry do and what could Ofcom do to facilitate greater use of those technologies?</p>	Confidential? - Y / N
<p>Question 23: What types of video demand could realistically be supported by private (for example SG) networks?</p>	Confidential? - Y / N

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<p>Question 24: What changes to working practices and spectrum planning could improve video spectrum efficiency in the future, particularly in the use of wireless microphones and IEMs at the largest events and venues?</p>	<p>Confidential? - Y / N</p>
<p>Question 25: Are there any barriers to adopting working practices that could enable more efficient use of spectrum by wireless video? What could industry do and what could Ofcom do to facilitate those efficiencies?</p>	<p>Confidential? - Y / N</p>
<p>Other comments</p> <p>Question 26: Do you have any other comments or views on the issues raised in this document?</p>	<p>Confidential? - Y / N</p> <p>Requiring wireless video equipment (both video, & control) to have better onboard filtering, to reduce contamination of surrounding wireless systems.</p>

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