

Consultation response form

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

Consultation title	Call for input: Sector Spectrum Review - Programme Making and Special Events (PMSE)
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Confidentiality

We ask for your contact details along with your response so that we can engage with you on this consultation. For further information about how Ofcom handles your personal information and your corresponding rights, see [Ofcom's General Privacy Statement](#).

Your details: We will keep your contact number and email address confidential. Is there anything else you want to keep confidential? Delete as appropriate.	Nothing
Your response: Please indicate how much of your response you want to keep confidential. Delete as appropriate.	None
For confidential responses, can Ofcom publish a reference to the contents of your response?	Yes

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, turn-around times, and event coordination. Do you think the current approach works well? How could we improve it?</p>	<p>Confidential? – N</p> <p>I think it works well</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? – N</p> <p>Not applicable to our company</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? – N</p> <p>We haven't had experience of this</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? – N</p> <p>We Don't use Wireless Audio.</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? – N</p>

Question	Your response
<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>	Confidential? – N
<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>	Confidential? – Y / N
<p>Question 8: What actions could enable greater take-up of the DME, DECT and licence exempt bands in the future?</p>	Confidential? – Y / N
<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>	Confidential? – Y / N
<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>	Confidential? – Y / N

Question	Your response
<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>	Confidential? – Y / N
<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>	Confidential? – Y / N
<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>	Confidential? – Y / N
<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>	Confidential? – Y / N
<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</p>	Confidential? – Y / N

Question	Your response
<p>Ofcom do to facilitate those 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? – N</p> <p>Greater number of video channels in film and broadcast are needed, 4k and HDR also have increased the demand as we need to use 2x channels now for each camera.</p> <p>We are finding more and more film sets now require wireless video, also in broadcast new camera systems are being introduced so increasing the number of channels needed.</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? 	<p>Confidential? – N</p> <p>More cameras and the increase in 4k/HDR means more bandwidth is needed.</p>

Question	Your response
c) the bandwidth used at horse racing fixtures and other 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>	<p>Confidential? – N</p> <p>4k video and HDR has meant wider channels are needed, different camera systems and the wider use on film sets is increasing the amount of wireless video channels needed.</p>
<p>Question 19: Which potential additional bands might be suitable for video PMSE applications, particularly at the largest events and venues?</p>	<p>Confidential? – N</p> <p>2.2 to 2.3GHz, 2.5GHz+, 3GHz, 1.5GHz would be good.</p>
<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>	<p>Confidential? – N</p> <p>We need high bandwidth and resilient RF to give low delay high quality pictures.</p>
<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>	<p>Confidential? – N</p>
<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>	<p>Confidential? – N</p> <p>Yes, DVBT can't be improved really to increase our bandwidth. We are at the cutting edge with encoding tech currently.</p>
<p>Question 23: What types of video demand could realistically be supported by private (for example 5G) networks?</p>	<p>Confidential? – N People haven't succeeded with 5G, the delay is too high.</p>

Question	Your response
<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? – 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? – 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? – N</p> <p>We need as much spectrum as we can to meet further demands in our industry. We also use data in the 450 to 470MHz range.</p>

Please tell us how you came across about this consultation.

- Email from Ofcom
- Saw it on social media
- Found it on Ofcom's website
- Found it on another website
- Heard about it on TV or radio
- Read about it in a newspaper or magazine
- Heard about it at an event
- Somebody told me or shared it with me
- Other (please specify)

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