

Your response

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<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>We as a company do not licence our own radio mics, we expect to professional hire companies we engage to carry out that task for us, some of the notable events we have done in the past few years are The Kings Coronation Concert, VE day 80 in Whitehall, DD 80 in Portsmouth, The Voice in Manchester and London, Festival of Remembrance at The Royal Albert Hall, The Oliviers at The Royal Albert Hall.</p> <p>The shows we do are seen by millions of viewers, as we understand it from our suppliers, they are always having to fit more channels in less spectrum, and we have even turned down production requests for a live Choir as there was not enough spectrum left at Windsor Castle.</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>As Question 1 we as a company do not licence our own radio mics, we expect to professional hire companies we engage to carry out that task for us, some of the notable events we have done in the past few years are The Kings Coronation Concert, VE day 80 in Whitehall, DD 80 in Portsmouth, The Voice in Manchester and London, Festival of Remembrance at The Royal Albert Hall and The Oliviers at The Royal Albert Hall.</p> <p>The shows we do are seen by millions of viewers, as we understand it from our suppliers, they are always having to fit more channels in less spectrum, and we have even turned down production requests for a live choir as there was not enough spectrum left at Windsor Castle.</p>
<p>Question 3: Do you have any comments on how we have analysed and characterised wireless video demand,</p>	<p>Confidential? – N</p> <p>N/A</p>

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<p>or suggestions for alternative ways of characterising wireless video demand?</p>	
<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>a) We work on bigger productions, and the expectations get bigger all the time. More roles now rely on wireless audio, especially IEMs. Our customers such as the BBC and ITV have low tolerance for failure.</p> <p>b) N/A</p> <p>c) N/A</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> <p>a) As question 5, we work on bigger productions, and the expectations get bigger all the time. More roles now rely on wireless audio, especially IEMs. Our customers such as the BBC and ITV have low tolerance for failure.</p> <p>b) N/A</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>c) N/A</p>
<p>Question 6: Do you agree that, given the trends, we are right to focus on wireless microphones/IEMs?</p>	<p>Confidential? – N</p> <p>Ofcom is right to focus on wireless microphones and IEMs in the UHF band, they are critical to modern production that we do for the major broadcasters.</p> <p>They are the backbone of the large-scale, high-profile events we are engaged to do and are essential for performance, cueing, safety, and communication.</p> <p>Any further loss of UHF spectrum would have a significant impact on both the sector and wider UK growth, we already do not have enough spectrum at some events such as The Kings Coronation Concert.</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? – N</p> <p>We need the suppliers we use to be aware of the bands available to maximise their use of all the spectrum available with 100% reliability, but also to not have to say no to a producer asking for more from a performance point of view, such as the choir of 15 we could not accommodate.</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? – N</p> <p>Again this is down to our suppliers making their kit work to give us the number of channels we need.</p> <p>DECT (1.9 GHz) systems are already widely used for wireless comms (e.g. Bolero, Clear-Com) so we don't see how radio mics and IEMs could be squeezed into that band as well. We would never envisage one of our suppliers using a licence exempt band, due to lack of coordination.</p>

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<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? – N</p> <p>No Comment</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? – N</p> <p>Latency is the main limiting factor for us using digital sound desk. For wireless microphones and IEM systems, even small delays in the signal chain can be perceptible and disruptive. In professional use, latency approaching 10 ms can affect timing and performance, while more exposed applications may require significantly lower levels.</p> <p>Reliability is equally critical. Live and broadcast systems are designed with redundancy and spare capacity because failure is not an option for us with our clients.</p>
<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? – N</p> <p>From talking to our suppliers we believe the PMSE sector is already operating at high efficiency within the existing constraints of spectrum availability, and we expect demand for wireless audio to continue growing, not decline.</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? – N</p> <p>No comment</p>

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<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? – N</p> <p>Cost of equipment and hence hire charges and lifecycle play a major role in the jobs we do, productions are always wanting a cheaper price than last year, but equipment is always getting more expensive.</p> <p>Operational familiarity with new equipment is important. Sometimes training is on the job because again of costs of training.</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? – N</p> <p>Given the high visibility of the live content we do and low tolerance for failure of our customers, reliability remains the overriding priority for us.</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 efficiencies?</p>	<p>Confidential? – N</p> <p>Our suppliers tell us the PMSE industry is already working efficiently and operating UHF spectrum at close to capacity, as we bear witness to their efforts.</p> <p>Ultimately, the system our providers supply are balanced between efficiency and reliability, and in live production, reliability must take priority.</p>

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<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>N/A</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 major sporting events? 	<p>Confidential? – N</p> <p>N/A</p>

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<p>Potential new 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>N/A</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>N/A</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>N/A</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>N/A</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>N/A</p>
<p>Question 23: What types of video demand could realistically be supported by private (for example 5G) networks?</p>	<p>Confidential? – N</p> <p>N/A</p>
<p>Question 24: What changes to working practices and spectrum planning could improve video spectrum efficiency in the future?</p>	<p>Confidential? – N</p> <p>N/A</p>

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<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>N/A</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>Wireless audio systems operate in environments where reliability, low latency, and resilience are critical.</p> <p>Licence-exempt options are not suitable for large-scale PMSE use due to lack of coordination. As a result, they do not provide a viable substitute for UHF in mission-critical applications.</p> <p>We believe PMSE remains highly efficient within the spectrum it has, but demand is defined by peak, risk-managed requirements rather than averages.</p> <p>Any policy that does not reflect this risks underestimating real-world needs and impacting delivery.</p>

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