

Your response

Question	Your response
<p>Do you agree with our proposal to take steps to mitigate risks related to EMF and be in a position to hold licensees, installers and users to account if issues are identified? Please explain the reasons for your response.</p>	<p>I can understand operators being irate about yet another restriction, but frankly it is not in their interests to have equipment running that might be shown to be a safety hazard according to international guidelines. If they were to receive a challenge about the safety of their equipment they would then be glad to have the backing of international standards.</p>
<p>Do you agree with our proposal (a) to include a condition in spectrum authorisations requiring compliance with the basic restrictions for general public exposure identified in the ICNIRP Guidelines; and (b) that this condition should apply to equipment operating at powers greater than 10 Watts?</p>	<p>(a) Yes (b) Do you mean 10 W or 10W EIRP? (See my response to the next question). The ICNIRP guidelines state a power flux density limit of $10\text{W}/\text{m}^2$ for general public exposure at frequencies above 10 GHz, so with an EIRP of 10 W, this translates into a "hazardous zone" stretching 0.28 m from the source, considered as a point source. Hence people should be prevented from getting closer than that. However, many sources will not be point sources but will have paraboloidal reflector antennas (or other beamed types), where the beam can be considered to be collimated in the region of interest. This means that a different calculation needs to be done: basically transmitted power divided by area of the dish, although this is not actually uniform and can be expected to be roughly doubled in the centre of the beam. However, if that region exceeds the limit then collimation means that it would theoretically stay constant for quite some distance, until divergence of the beam takes over and weakens it.</p> <p>However, your document is very confused and ambiguous between power and EIRP and this needs to be clarified as a matter of urgency (see my comments below).</p> <p>Clearly, regulators cannot be investigating every last Wi-Fi router and hence some pragmatic lower cut-off threshold needs to be established. The question is, should the threshold be power or EIRP, or even something else such as power flux density? I comment extensively below on the confusion in the draft</p>

	<p>document between power and EIRP. I think that EIRP is probably a safer basis, but if relatively inexpert personnel are to check the "writing on the tin" as provided by the equipment manufacturer, will it normally be expressed in power or EIRP? I suspect the answer is power. So if the limit were 10 Watts power, this might be fed to a high gain antenna that will produce a significantly higher EIRP. Looking at my calculation above, I am inclined to suggest a somewhat lower figure of power (not EIRP) for the threshold, although I freely accept that your people working in the field will have a better feel for what is a pragmatic cut-off point.</p>
<p>Do you agree with our proposed guidance on EMF compliance and enforcement? Please explain the reasons for your response.</p>	<p>As it stands, I do not agree. Reading the full guidance document, there seems to be some confusion: most of the way through it just says the new regulations will apply to equipment radiating more than 10 Watts. It is not until clause 4.36 that it suddenly says 10 Watts EIRP (effective/equivalent isotropically radiated power), which is a different matter, and more onerous than a simple criterion of 10 W.</p> <p>In the section "A2. Draft guidance on EMF compliance and enforcement" it appears to switch to talking about EIRP all of the time. Significantly, the fine-print footnote 51 states "EIRP stands for Equivalent Isotropically Radiated Power. It is a measure of the strongest power emitted in any direction from an antenna. <u>In this document, when we refer to the power transmitted by a piece of radio equipment, we are referring to EIRP unless explicitly stated otherwise.</u>" (my underlining). I feel this is very confusing: transmitted power and EIRP are significantly different in many systems and the whole document should make a clear distinction. This footnote seems to suggest that the simple criterion of 10 Watts stated from the beginning of the document should be interpreted as meaning EIRP throughout: this should be made crystal-clear at the start.</p>