

Open Spectrum UK's response to Ofcom's Licence-Exemption Framework Review consultation

Q1: Do you agree that the spectrum commons model should be the preferred approach for licence-exempt use of spectrum, and that application-specific allocations should only be considered where technical constraints or safety issues require this?

Yes. But there may come a time when the total bandwidth shared by licenced and licence-exempt uses is greater than the total bandwidth allocated exclusively for licence-exempt "commons". This may result from the progressive introduction of underlays, overlays and easements in bands which had been previously allocated only for licenced uses, or from the de-licencing of licenced services. We would not hinder these processes by insisting on the "commons" model.

Q2: Do you agree with the proposal for multiple classes of spectrum commons?

Yes.

Q3: Do you agree with the distinction made between the licence-exemption and light-licencing regimes?

Yes, it is clear and appropriate.

Q4: Do you agree with the view that the licence-exemption and light-licencing regimes will converge in the future?

The word "will" is too strong. Automatic coordination capabilities which are functionally equivalent to light-licencing *might* be built into some licence-exempt devices in future. But unless such capabilities are demanded by purchasers or required by regulators, there might also be devices not so equipped, due to cost, itinerant usage, low risk of interference resulting from limited range or the effectiveness of other mitigation measures. It is within Ofcom's power to *make* this convergence happen, although it may not happen spontaneously.

Q5: Do you agree with the proposed mixture of licence-exempt and light-licenced use of the 105–275 GHz spectrum? Do you agree with the bands that have been identified for such use?

Yes, so long as Ofcom periodically checks whether there is a continuing need for light-licencing in specific bands and de-licences any non-exempt band in which the risk of undue interference is small – as proposed on page 38 of the LEFR statement.

We also applaud the rejection of Option 3 in Section 6.2.2 of the LEFR statement:

“Option-3: Do not release any spectrum above 105 GHz until such time as there is clear evidence of demand for use by licence-exempt or light-licensed devices.

“We do not favour Option-3. We believe this to be an over-cautious approach in a space where there is little likelihood of congestion and harmful interference. Such an approach will ultimately slow down the pace of innovation and the emergence of new high-frequency services.”

There have been several recent announcements of important developments in this part of the spectrum. Taken together these suggest that affordable devices operating in this band may be available sooner than expected just a few months ago, and some applications in this frequency range could be quite socially valuable.¹ This constitutes “clear evidence of demand” so it is desirable to have regulatory certainty established sooner rather than later.

Q6: Do you agree with the view that the use of the 275–1000 GHz spectrum should be licence-exempt?

Yes, but excluding the frequencies allocated for spectral line measurements as specified by Footnote 5.565 of the International Radio Regulations.

Q7: Do you agree with the view on the levels of future demand for licence-exempt usage in the 40–105 GHz spectrum? Do you agree that the Group-A bands identified above should be considered for licence-exempt use? Do you agree that licence-exempt and light-licensed use of the Group-C bands identified above should only be considered when there is evidence of demand for such use?

We would prefer to have the Group-C bands considered for licence-exempt use unless there is a demonstrable need for light-licencing. The fate of these bands may be influenced by the allocation decisions of other countries...

Q8: Do you think it could be desirable for transmissions at levels below certain power spectral density limits to be exempt from licensing?

Yes, but as underlay devices proliferate, Ofcom may also need to tighten requirements for interference rejection in the equipment with primary status in the underlaid band. Higher standards for receiver performance (with regard to sensitivity, selectivity and interference resistance) would contribute significantly to the more efficient use of spectrum.

¹ “Engineers Set New World Record In Generation Of High-Frequency Submillimeter Waves”, *Space Daily*, 17 April 2007 - http://www.spacedaily.com/reports/Engineers_Set_New_World_Record_In_Generation_Of_High_Frequency_Submillimeter_Waves_999.html. “Harnessing New Frequencies”, University of Utah press release, 28 March 2007 – <http://unews.utah.edu/p/?r=010807-1>. “The amazing strip-search scanner,” *The Daily Mail*, 17 May 2007 - http://www.dailymail.co.uk/pages/live/articles/technology/technology.html?in_article_id=455506&in_page_id=1965.

Q9: Do you agree with the transmission limits proposed in this document?

Yes, the discussion is quite positive, but we must note that the field strengths appropriate for ultra-wideband transmissions may be uselessly low for non-UWB devices. We understand the need to protect primary services, but if Ofcom observes that the proposed transmission limits for underlays result in “market failure” (i.e., no manufacturers take advantage of the opportunity to develop low-power systems in the newly available bands), we hope that the limits proposed for non-UWB equipment will be reconsidered.

Q10: Do you agree with the harmonisation strategy discussed above in the context of licence-exempt devices?

Generally yes, because of economic factors. But given the low probability of licence-exempt devices causing interference to foreign stations, the UK has a great deal of autonomy in setting policies for short-range devices – autonomy which it is only now beginning to tap. We hope that implementing the policies proposed in the LEFR will lead to greater confidence in licence exemption, so that Ofcom will in future be more willing to de-regulate without waiting for an international consensus on specific frequency bands.

Q11: Do you agree with the view that no additional regulatory instruments, beyond those available today, are required for the protection of licence-exempt equipment?

The “protection of licence-exempt equipment” is not the only relevant issue. In an article published in the May 2007 issue of *PolicyTracker* (“Critics applaud Ofcom’s proposals for licence-exempt spectrum” by Michael Newland), we suggested that “technology- and service-neutrality” made it much easier to declare certain bands licence-exempt, rather than the various devices and services using the band, as is done at present. William Webb was quoted in response, saying that Ofcom had considered that possibility, and decided its ability to define broad classes of devices and services – and to exempt them collectively – was adequate. Experience should reveal soon whether the current approach (based on devices and services) or one based on bands is preferable.