

Licence Exemption Framework Review: T-Mobile's response

GENERAL COMMENTS

T-Mobile welcomes the opportunity to respond to Ofcom's consultation on the Licence Exemption Framework Review.

Determining whether particular spectrum should be licensed or set aside for licence exempt use represents one of the key remaining areas in which the regulator will significantly influence spectrum use going forward.

Designating spectrum for licence exempt use can, in practice, represent an irreversible decision if devices spread throughout the community with little information on the users and usage involved. As such, spectrum should only be designated as licence exempt if there is sufficient certainty that the likely benefits of licence-exempt applications will outweigh the benefits of alternative applications that would require the use of that band to be licensed and will outweigh costs such as interference to other bands. Where there is substantial uncertainty over the development of technologies, T-Mobile would urge Ofcom to display caution and recognise the value of keeping the options open in relation to the future use of the spectrum.

Given that investment and planned technology are based on the ability to use spectrum in a certain manner, frequency owners need certainty that no interference will change the spectrum value itself and will not jeopardise infrastructure investments based on certain assumptions for spectrum use.

T-Mobile has concerns over applying general power spectral density limits derived for UWB equipment to non-UWB equipment. We believe that a band-by-band analysis is required to ensure that no interference is caused to existing users of the radio spectrum. We would also maintain that the affected services are fully consulted before equipment is exempted in particular bands.

We have limited our response to Questions 8, 9 and 10.

OFCOM'S QUESTIONS

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

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

T-Mobile believes that a full analysis is required before transmissions are exempted from licensing in bands which are already licensed or occupied by existing users.

Section 7.2 of the consultation states that:

"It is logical to conclude that any device that transmits at a power spectral density which is lower than the UWB limits would, at worst, cause as much interference as a UWB device, and certainly far less interference than the non-UWB licence-exempt short-range devices available today. Consequently, any such device, irrespective of its transmission bandwidth, would most likely be a candidate for licence-exemption."

However the power spectral density limits have been derived based on assumptions regarding the characteristics of UWB devices e.g. with respect to the number of devices, deployment scenarios (UWB devices are assumed to be operated mainly indoor), signal structure including duty cycle. These assumptions are not likely to be the same for other transmissions. UWB has been studied on a band-by-band basis over many years to derive these power spectral density limits and should not be applied generally to all licence-exempt devices. Any additional increase of the noise level by new devices could cause interference or impact the capacity of existing radio systems leading to additional costs in infrastructure for mobile network operators.

The limits may be acceptable from the perspective of UWB but should not simply be transposed to other licence exempt technologies without a full analysis of the impact to existing users of the radio spectrum and taking into account the characteristics of both the licence-exempt and existing systems.

Section 7.2 also states:

"Figure 7 clearly indicates that non-UWB devices transmit at power spectral densities which are at least two orders of magnitude (20 dB), and typically four to six orders of magnitude (40-60 dB) above the UWB specifications."

If non-UWB devices can not meet the UWB limits then there does not seem to be any point in setting general limits for licence exempt devices which could impact on existing users of the radio spectrum.

Footnote 59 of the consultation states:

“ Any future authorisations of licence-exempt use by Ofcom will generally be subject to specific consultations with associated impact assessments, as appropriate, for the concerned bands.”

We would maintain that any authorisations should certainly be studied and the affected services fully consulted.

In conclusion, we do not agree that:

- The UWB limits on radiated power spectral density define a de-facto lower bound for the licensing of radio devices.
- Transmissions at levels below the specified limits may be exempt from licensing.

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

T-Mobile agrees that regulatory harmonisation is justified both at the European and at a global level for licence-exempt devices for the reasons listed in the consultation. In particular we believe harmonisation is required in order to minimise interference from licence-exempt equipment brought into the UK from abroad.

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