A Telefónica company

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Dear Reza

O2's Response to Ofcom's Licence-Exemption Framework Review

O2 (UK) Limited, "O2", welcomes this opportunity to comment on Ofcom's Licence-Exemption Framework Review (LEFR). In this cover note to our response we address the key issues raised by the Review. In the Annex we include our responses to the questions raised by Ofcom in the consultation.

As we noted in our 2005 response to the Spectrum Framework Review (SFR):

> "O2 agrees that the amount of spectrum that is required for licence exempt applications will be limited ... O2 has not corroborated Ofcom's studies that suggest around 800MHz of unlicensed spectrum would allow all users in an office or home environment to have access to 100Mbits/s transmissions under most normal situations, but we agree … that this is an appropriate target data rate on which to base such calculations for a 10-year view."

We agree with Ofcom's LEFR statement that one of the most important considerations in the licence-exemption framework must be the provision of an ***appropriate*** amount of spectrum for licence-exempt (LE) applications. In the same way that we highlighted the point some 30 months ago, we have still seen no evidence that the relatively large amount of spectrum made available for short range LE use in recent years is in danger of becoming limited in utility, and we would therefore not expect ***any*** further increase in the amount of spectrum set aside for licence exempt use in the short to medium term in frequencies below about 60GHz[1]. This view seems to be supported by the evidence Ofcom presented at the LEFR seminar[2], which states (slide 8) "Current LE bands are lightly used". Ofcom's own measurements, in what Ofcom considers to be "by far the highest value" LE band (and thus one of the busiest, at 2.4GHz), indicated an average utilisation of just 10%. We therefore agree with Ofcom's conclusion that no further LE spectrum is needed at 5GHz, but believe that this conclusion should be extrapolated up to around 60GHz.

O2 notes that Ofcom's studies indicate potential demand in the 59-64GHz and 102-105GHz bands, but we consider that above this frequency spectrum should also only be made available for LE devices where appropriate studies illustrate demand and justify an allocation. Ofcom claims that supply exceeds demand in higher frequency bands, and that "licensing imposes an unnecessary bureaucratic burden", yet it appears to O2 that this latter aspect is entirely in Ofcom's own hands. Ofcom correctly identifies that the provisions of the WT Act 2006 require them to make regulations exempting the use of apparatus that "is not likely to involve undue interference with wireless telegraphy", but the proposed approach in bands above 105GHz presupposes that all potential wireless telegraphy applications have already been licensed. O2 believes that it is likely, as technology develops, more licensed

[1] Being the upper limit considered by the SFR.
[2] Ofcom presentation on the LEFR consultation, May 2007.

applications at higher frequencies will emerge, and we believe that, even though the chances of interference are much reduced at these higher frequencies, there should be a more cautious approach taken to the exemption of spectrum. O2 suggests that Ofcom considers how to develop a less burdensome, more responsive approach to future studies that justify additional allocations for spectrum use at frequencies >105GHz, whilst continuing to consider making the bands at around 60GHz and 100GHz available for LE use as proposed.

The second key issue for O2 concerns the proposal by Ofcom to use a similar approach to that taken on Ultra-WideBand (UWB) equipment for all low-power transmissions. We note that O2, in conjunction with many other stakeholders, only accepted the approach adopted by the European Commission[3] for introducing UWB devices on the basis of the large numbers of technical studies that were undertaken to assess the potential interference from aggregate as well as individual UWB sources, and we note that there are a number of qualifications and restrictions to deployment in the resulting European and proposed UK regulations. As highlighted in the draft Statutory Instrument regarding the introduction of UWB Exemption Regulations[4] these include:

– That equipment is used indoors (Regulation 4 paragraph (2)(a));

– That equipment is not attached to an automotive or railway vehicle (Regulation 4 paragraph (2)(b)); and

– That equipment in certain frequency bands has limits that are only applied in circumstances where a low duty cycle is also used (Regulation 4 paragraph (5)(b)).

In addition, we note that the European Commission's Decision sets a time constraint on the power limits in one band, whereas the proposed UWB Exemption Regulations do not have this constraint (Regulation 4 paragraph (5)(a)). Ofcom states that they will amend the Regulations "in 2010 to align with the requirements". O2 is unsure that this is sufficient to reassure stakeholders and will comment on this issue when responding to the draft Regulations' Notice. We believe that Ofcom must justify more substantively why similar studies, qualifications and restrictions are not needed to cover other low-power technologies. Also, O2 considers that any other low-power technologies should be covered by specific Regulations rather than indirectly referencing UWB Regulations.

Finally, as we noted in our 2005 response to the consultation on UWB:

> "We recognise that Ofcom (under section 1AA(2) of the Wireless Telegraphy Act 1949, as amended by the Communications Act 2003) needs to be satisfied that the use of UWB 'is not likely to involve any undue interference' with licensed systems, but we are not certain that all spectrum users have the same understanding of Ofcom's measure(s) of satisfaction.
>
> The 1949 Act (as amended) defines undue interference (section 19) as:
>
> *"(5) Interference with any wireless telegraphy is not to be regarded as undue for the purposes of this Act unless it is also harmful.*
>
> *(5A) For the purposes of this Act interference is harmful if:*
>
> *(a) it creates dangers, or risks of danger, in relation to the functioning of any service provided by means of wireless telegraphy for the purposes of navigation or otherwise for safety purposes; or*
>
> *(b) it degrades, obstructs or repeatedly interrupts anything which is being broadcast or otherwise transmitted-*
>
> *(i) by means of wireless telegraphy; and*

[3] EC Decision 2007/131/EC, 21 February 2007.

[4] "Notice of Ofcom's proposal to make (Ultra-Wideband Equipment) (Exemption) Regulations", 5 June 2007.

> *(ii) in accordance with a licence under this Act, regulations under the proviso to section 1(1) of this Act or a grant of recognised spectrum access under Chapter 2 of Part 2 of the Communications Act 2003 or otherwise lawfully."*
>
> The key measures, in our view, are the measures of degradation, obstruction or interruption that Ofcom will employ to assess whether interference from UWB devices is harmful."

Ofcom admits that "the definition of 'acceptable' interference is of course debatable, and is dependent on the nature of the incumbent radio services" but then states that "it is possible to define transmission limits based on a broad definition of acceptable interference". We disagree, unless the limits are set very conservatively. As we stated in our response to the UWB consultation:

> "Without an adequate definition of these measures it is difficult to see how Ofcom will assess whether interference … is harmful. We therefore consider that Ofcom should clarify its intentions towards such an assessment when responding to this consultation."

O2 still believes that, without an adequate (i.e. Statutory) definition of the measures of degradation, obstruction and interruption that Ofcom will employ in assessing whether interference into radio services from low-power transmissions (other than UWB) is harmful, the only way that a generic set of transmission limits can be defined would be to include an appropriate margin on power limits, and appropriate qualifications and restrictions on the conditions that such LE devices can be used under. Alternatively, limits and conditions could be defined in specific Regulations, as in the case of UWB, when justified by appropriate studies. As this is a framework consultation it does not make specific (band-by-band or technology-based) proposals. Ofcom states that additional consultations will be published on such proposals in due course. We look forward to engaging in those future discussions.

We trust that you will take these concerns into account when publishing your response Statement(s). If you would like to discuss any of these issues further with me or any of my colleagues, please do not hesitate to contact me.

Yours sincerely,

Simon Wilson

Simon Wilson

Spectrum Policy Manager

O2 Holdings Limited

ANNEX Responses to Ofcom's consultation questions

Question 1 : 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.

Question 2 : Do you agree with the proposal for multiple classes of spectrum commons?

O2 believes that politeness rules or protocols should be defined wherever possible for spectrum commons. Detect and avoid mechanisms are essential for underlay applications.

Question 3 : Do you agree with the distinction made between the licence-exemption and light-licensing regimes?

Yes.

Question 4 : Do you agree with the view that the licence-exemption and light-licensing regimes will converge in the future?

No. Light licensing is necessary when spectrum is shared with a licensed service, unless it is an underlay. In our view in-band sharing should be allowed under the control of the incumbent licensee as part of the trading regulations.

Question 5 : Do you agree with the proposed mixture of licence-exempt and light-licensed use of the 105-275GHz spectrum? Do you agree with the bands that have been identified for such use?

No.

Question 6 : Do you agree with the view that the use of the 275-1000GHz spectrum should be licence-exempt?

No.

Question 7 : Do you agree with the view on the levels of future demand for licence-exempt usage in the 40-105GHz spectrum? Do you agree that the Group-A bands identified should be identified for licence-exempt use? Do you agree that the licence-exempt and light-licensed use of the Group-C bands identified should only be considered when there is evidence of demand for such use?

Yes.

Question 8 : Do you think it could be desirable for transmissions at levels below certain power spectral density limits to be exempt from licensing?

Yes, but only if the levels are set to an appropriately conservative level. Reference to the UWB limits may not be wholly appropriate and a suitable margin on power limits, together

with qualifications and restrictions on the conditions that such LE devices can be used under, would need to be defined. O2 would prefer similar studies, qualifications and restrictions to those undertaken in the case of the development of the UWB Regulations to cover other low-power technologies.

Question 9 : Do you agree with the transmission limits proposed?

No.

Question 10 : Do you agree with the harmonisation strategy discussed in the context of licence-exempt devices?

Yes, compatibility with European legislation and Regulation is essential.

Question 11 : Do you agree with the view that no additional regulatory instruments, beyond those available today, are required for the protection of licence-exempt equipment?

Yes, there should be no additional protection given towards licence-exempt users of spectrum beyond the current legal obligations.