



Telefónica Group response to consultation on draft RSPG Opinion on "Aspects of a European Approach to 'Collective Use of Spectrum'"

General comments

Telefónica would like to thank the Radio Spectrum Policy Group (RSPG) for giving stakeholders the opportunity to comment on the draft Opinion on aspects of a European approach to "Collective Use of Spectrum" (CUS). We consider this to be an important issue that is complementary not only to the previous RSPG Opinions on secondary trading and flexibility (WAPECS), but also to the current debate about the balance between licensed use of spectrum and general authorisations within the European Regulatory Framework. Telefónica agrees that this Opinion should be considered in the context of identifying the right mix between the different licensing models and approaches to spectrum management.

Telefónica believes that one of the most important considerations in any spectrum management framework must be the provision of an *appropriate* amount of spectrum for CUS applications authorised via licence exemption, light licensing or private commons. We have seen no evidence that the relatively large amount of spectrum made available for short range CUS 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 such use in the short to medium term in frequencies below about 60GHz¹. This view seems to be supported by evidence², which concludes that current Licence Exempt (LE) bands are lightly used. Measurements in what is considered to be the highest value LE band (and thus one of the busiest, at 2.4GHz), have indicated an average utilisation of just 10%³.

Telefónica also believes that the amount of spectrum that is required for LE and other CUS applications will be inherently limited. We have not corroborated studies⁴ that suggest around 800MHz of CUS spectrum would allow all users in an office or home environment to have access to 100Mbps/s transmissions under most normal situations, but Telefónica agrees that this is an appropriate target data rate on which to base such calculations for a 10-year view⁵.

¹ 60GHz being the upper limit considered by some studies, such as those undertaken by Ofcom in its 2004 Spectrum Framework Review (SFR).

² Such as that presented by Ofcom during its 2007 Licence-Exemption Framework Review (LEFR).

³ <http://www.ofcom.org.uk/consult/condocs/lefr/presentation.pdf>, p.8.

⁴ <http://www.ofcom.org.uk/consult/condocs/sfr/sfr2/>, p.26.

⁵ For example, IEEE802.11n (the next generation WiFi standard that will eventually substitute IEEE802.11a/b/g), has a maximum gross bit rate in a 4x4 configuration of 248Mbps/s if using a single 20MHz channel, but a typical throughput under good conditions of 74Mbps/s.

The balance between licensed use of spectrum and general authorisations

We agree with the RSPG that CUS complements individual usage rights, and we note that with the definition of CUS adopted by the RSPG there are some instances, such as the private commons, where CUS is achieved within an individual authorisation. However, Telefónica considers that most services currently being provided over radio spectrum need individual rights to be granted in order to ensure an appropriate quality of service by avoiding the threat of harmful interference, and that this puts limits on the applicability of such a hybrid approach. In particular, we do not consider it appropriate to extend the approach taken to the introduction of UltraWide Band (UWB) technology to the establishment of a set of generic underlay limits. UWB applications are now permitted following extensive analysis of the aggregate interference effects; this approach cannot be extended directly to an undetermined number of independent users of unknown technology, communication distance or usage patterns.

Telefónica believes that, once consideration has been given to the total amount of spectrum that may be needed for CUS, the distance of communications and the type of usage are the secondary markers that should be used to help identify when CUS might be appropriate. From this basis, the specific spectrum band (e.g. to ensure sufficient bandwidth) and power levels (to minimise the potential for interference) will emerge. We agree with the RSPG that the primary focus for CUS is likely to be short range applications that are well suited to the higher frequency bands. The relatively large amount of spectrum made available for short range CUS use in recent years is, in our view, sufficient to accommodate additional applications for the foreseeable future, and we would therefore not expect *any* further increase in the amount of spectrum set aside for CUS in the short to medium term.

Telefónica also believes that the role of mobile network operators, amongst the different interested parties and within a collaborative environment, will remain important to foster and promote innovation in CUS applications. For example, the complementary usage of WiFi networks accessed by iPhone users is helping to increase the uptake of mobile broadband connectivity, and the integration of Near Field Communications (NFC) in handsets allows new mobile payment applications (such as mobile ticketing, mobile wallet, and so on) to be developed. To reap the full benefit, Telefónica believes that the RSPG should strive to establish a stable and predictable regulatory framework, in particular with regard to spectrum allocations and the definition of sharing conditions that are suitable for these innovative services.

Impact Assessments

Telefónica also agrees that it is necessary to undertake a comparison of the benefits of a CUS approach with a more flexible licensed approach to spectrum usage, prior to the allocation of additional spectrum to CUS use. This is needed to ensure that potential users would be able to exploit the spectrum in question whilst maintaining an adequate level of quality for the intended range of services, as there is an inherent uncertainty over the level of interference associated with LE and other collective spectrum use. We also believe that it would be necessary for the benefits of CUS to outweigh significantly the long-term benefits of alternative applications that might require the use of that band to be licensed, before any decision to allocate additional spectrum for CUS applications, since such a decision would be very difficult, costly and time-consuming to reverse.

Finally, we note that, if there is to be an increase in the use of CUS spectrum every effort should be made to ensure an adequate level of harmonization of bands at the international level, since it is difficult to control the global circulation of LE equipment.