Title:

Mr

Forename:

Edgar

Surname:

Figueroa

Representing:

Organisation

Organisation (if applicable):

Wi-Fi Alliance

Additional comments:

The Wi-Fi Alliance respectfully submits its comments to the Ofcom call for input on spectrum review.

Regards,
Edgar Figueroa
CEO

Question 1: What are likely to be the key underlying factors influencing changes in demand for this spectrum (in terms of quantity of spectrum or preferred bands) over the next 5 to 10 years? Please provide band specific evidence to support your view.:

57 to 66 GHz: This spectrum will be used extensively for indoor, low cost, high volume applications replacing video and audio wire line technology. In addition, this spectrum will have outdoor uses where professional installation will allow high speed, line of sight, backhaul applications. This spectrum could garner more applications by also including the 40 to 50 GHz band. 60 GHz Wi-Fi transceivers are already in development by major silicon manufacturers and should appear on the market during 2013.

Frequencies below 6875 MHz: This spectrum will be used for WLAN applications reducing the user density in the highly populated 2.4 GHz spectrum. Additional spectrum benefits the user community by providing greater traffic throughput with shorter bandwidth occupation times, allowing for greater number of users in this band. At the lower portion of this band (sub 1 GHz) this spectrum will allow greater operating distances for WLAN applications.

With increased band options some portion of the 2.4 GHz band could eventually be used as control spectrum allowing devices to discover services and then subsequently be directed to

other vacant or sharable bands from 6875 MHz and down, making applications independent of frequency.

Our default position is that additional spectrum should be made available as license-exempt unless a compelling case can be made for an alternative access regime. Our second preference is a lightly licensed regime. The success of Wi-Fi and a number of other unlicensed technologies in flexibly meeting the needs of a diverse range of users has demonstrated the benefits of unlicensed spectrum.

The projected rate of increase in the use of wireless devices dictates the use of more bandwidth which can be unlicensed or lightly licensed.

Question 2: Will the reducing trend in the numbers of fixed links in the spectrum under review to support mobile backhaul continue? If so, in which bands will this reduction be most apparent and how will link capacity/bandwidth requirements change? What factors will have the biggest influence on the outcome? In your view, what will be the impact, on spectrum demand, of deploying next generation mobile networks for example using Long Term Evolution (LTE) standards? :

No comments.

Question 3: How might the changes to current or future public safety networks influence the existing and future requirement of the spectrum under review for fixed link backhaul for public safety applications over the next 5-10 years? In which spectrum bands is demand most likely to arise and how much spectrum would be required? May demand for bands currently used by public safety applications decrease? Is it likely that the public safety services may require access to the spectrum under review for other data networks or for alternative uses?:

No comments.

Question 4: How likely is it that use of CCTV by local authorities will significantly increase overall demand for fixed link infrastructure spectrum over the next 5 to 10 years? If so, in which bands is the additional demand most likely to be required and why? Do you have any information about the relative costs of wired and wireless CCTV links in urban and rural areas?:

No comments.

Question 5a: What are the main factors (technical or regulatory) that determine preferences for one band over another for satellite applications? Do these factors vary between different types of satellite applications (Mobile, Fixed, Broadcasting and Science services)? In which bands will we see the most significant changes in demand in the next 5 to 10 years, and why?:

No comments.

Question 5b: A number of the frequency bands under review are currently used for satellite Permanent Earth Stations (PESs), for example to feed Direct to Home satellite broadcast services. What are the continued and future spectrum requirements for satellite PESs (E-s & s-E) likely to be and in which bands? Please provide evidence to support your views.:

No comments.

Question 5c: During recent years, some commentators have forecast significant demand for spectrum to support satellite consumer terminals. To date this demand has been slow to materialise. Do you have information which would help inform a more accurate assessment of future demand for spectrum in bands currently shared with fixed links?:

No comments.

Question 5d: Are there factors specific to the satellite based communications sector which mean that it faces particular difficulties evidencing and satisfying demand for spectrum? If so, how might these be overcome?:

No comments.

Question 6: What is the likely timetable for rollout of Smart Grids and what impact will these developments have on demand for spectrum in the bands covered by this review?:

No comments.

Question 7: What impact will DAB expansion have on demand for the spectrum under review? Are there any other demand drivers that Ofcom should consider in relation to broadcasting use or services related to broadcasting? :

No comments.

Question 8a: What is the likely demand for broadband wireless access applications in the spectrum under review and which bands is this likely to specifically impact? How should Ofcom consider the demand for backhaul to support such applications and is such backhaul demand likely to arise in the spectrum under review?:

No comments.

Question 8b: Do you consider that the emergence of rural broadband fixed wireless access will influence overall demand for the spectrum under review and to what extent? Which bands is this likely to impact most?:

No comments.

Question 9: Do you consider that there will be a material additional demand from the PMSE community for access to the spectrum under review? Which bands under review is this likely to impact most and to what extent?:

No comments.

Question 10: How might the economics of new fibre provision (with or without reliance on regulatory remedies ? whether active or passive), as compared with wireless provision of both terrestrial and satellite based services, impact on the requirements for wireless backhaul? We are interested in the possible impact, in terms of the extent of possible substitution for wireless links and in terms of the nature of wireless links affected (urban v. rural, lower / higher frequency bands).:

No comments.

Question 11: What issues relating to spectrum access for different services do you think Ofcom should review? How might Ofcom start to rely more on commercial decisions when determining allocations of spectrum in the bands covered by this review?:

The never ending demand for access by more people, and the explosion of more applications, people are continually finding new uses for wireless communications. Video conferencing and Facebook are examples of the new wave of social communication. We only see social communications expanding, and as history has shown, we are not always excellent predictors of the needed expansion or the rapidity of it. Streaming applications such as YouTube, internet radio and TV reruns are applications that continue to expand demand for shared bandwidth.

Another emerging application area is machine to machine or internet of things where there is a need for devices to communicate with one another in a relatively autonomous fashion. It is predicted that billions of additional devices will be interconnected in this manner over the next decades.

Question 12: We would welcome views on the potential for more widespread use of market based approaches to the spectrum under review such as third party band management, and the regulatory steps which would need to be taken to facilitate this. :

No comments.

Question 13a: do you consider that any changes should be made to the Ofcom licence fixed link product set?:

No comments.

Question 13b: Might a more flexible approach to licensing, in bands where demand is unlikely to exceed supply for the foreseeable future, enable more intensive use of these bands? If so, what form might the licensing take and in which bands would this be appropriate? :

No comments.

Question 13c: Are there other actions which Ofcom could take to improve spectrum efficiency by encouraging migration to or use of higher, less heavily used, bands, with a view to freeing up spectrum in popular lower frequency bands? :

No comments.

Question 14: What is your view on the impact of geographically uniform fees for spectrum bands included in this review? If you consider that a geographic fee modifier would promote more efficient use of spectrum, how might that modifier be constructed?:

No comments.

Question 15: Are there other aspects of the review on which you have evidence that would help inform our consideration of these issues and formulate proposals for consultation?:

No comments.

Question 16: Is the proposed list of bands to be included within the review (as set out in Figure A.5.1 in Annex 5 appropriate?:

Yes.