SOUTH EAST ENGLAND DEVELOPMENT AGENCY

Working for England's World Class Region

Higher power limits for licence exempt devices

Consultation response

Prepared by the South East England Development Agency on behalf of the English Regional Development Agencies

1. Introduction

SEEDA, acting for the nine English Regional Development Agencies, welcomes the opportunity to respond to Ofcom's consultation on higher power limits for licence exempt devices. We welcome the proposal to permit higher power levels under specific circumstances, with the aim of improving broadband availability in remote areas. We believe that the technology to enable devices to detect their location, and deduce whether they are legally permitted to transmit at higher power levels within this location, could easily be manufactured at affordable prices. Furthermore, we believe that the development of such devices could offer a market opportunity to British companies.

We must register one concern with the underlying research. Certain figures and statements in the evidence base suggest that the initial work was carried out some years ago when availability of broadband in rural areas was very limited. Statements such as "many rural communities do not have access to DSL or cable and expensive satellite broadband is often the only option"[1] now seem exaggerated. Nevertheless, we believe that permitting an increase in power levels, subject to strict conditions, remains a reasonable course of action which could improve the business case for wireless networks in areas (rural and otherwise) not currently served by ADSL.

2. Response to Ofcom's questions

2.1 Have all the possible victims of interference been correctly identified and quantified as far as possible?

No opinion.

2.2 Have the costs and benefits been correctly captured? In particular, are the costs of interference to WLANs appropriately assessed?

No. We are concerned that at least some of Scientific Generics' research appears to have been conducted before ADSL became widely available in rural areas. Now, nearly all of BT's exchanges support ADSL and "pre-WiMAX" backhaul solutions can be used. The economics of providing broadband services to rural areas have changed considerably.

The net benefits shown on p.20 of the consultation document are based on an "assumption that residential consumers pay £35 per month..." Since the typical market rate for 2Mbps ADSL services has fallen below half this level, and certain suppliers are including "free" broadband with their telecommunications services, the net benefit figures need to be recalculated.

[1] Page 2 of Scientific Generics' report

Scientific Generics acknowledge that their figure of £35 per month represents "a premium to benchmark DSL pricing, which is justified by the fact that DSL is not available to these subscribers and is in line with market practice" (p.55 of their report). We consider a premium of 119% over the £16 per month DSL benchmark cited on p.81 of the same report to be unrealistic.

2.3 Are there any other mechanisms that could be used to restrict device operation to appropriate areas? Of the schemes set out which should be preferred?

We are not aware of any other mechanisms that could be used to restrict device operation to appropriate areas. Of the schemes set out, we prefer location-aware devices, because:

(i) There would be no difficulty in policing the system; by contrast, a "light registration" scheme could be very hard to enforce

(ii) There are no inherent technical problems with building GPS-aware devices. GPS modules are available to the electronics industry at less than £30 each.[2]

(iii) This would appear to create a market opportunity for British companies to manufacture "location-aware" devices comprising a GPS module and a higher-power 2.4GHz radio transceiver.

In view of comment (ii) above, we question Ofcom's assertion (p.25) that "the customised equipment is expected to be relatively costly". Since we would expect such equipment to be deployed on a "one per community" basis rather than one per home, the additional cost would be divided between several users and would, we feel, be insignificant in relation to other business costs.

Ofcom points out that location-aware equipment would need to contain a database of permissible locations for higher power outputs, and that this database would have to be both secure and capable of being updated periodically. We suggest that a time-limited, suitably authenticated database be made available online and updated from time to time as required. The radio equipment might download a new database across an Internet connection (which, by definition, it would support) on a monthly basis.

Legal disputes could arise if a user bought a location-aware high-power radio for use in a specific location, if that location were later removed from the list of acceptable places for high-power transmission.

[2] For example, see http://www.rfsolutions.co.uk/acatalog/Embedded_GPS_Module.html

2.4 Should we move from specifying radiated power to specifying conducted power?

We do not consider that changing these regulations would make much difference either way; however, the US model of balancing increases in radiated power with reductions in conducted power seems reasonable and fair. When considering whether these regulations should be amended, Ofcom should bear in mind that

(i) it is radiated power, not conducted power, that causes interference, and

(ii) the stated motivation for considering increases in the permitted power levels is to strengthen the WISP business case in rural areas.

It is possible that permitting directional aerials with existing power levels would increase backhaul distances sufficiently to make rural WISPs more viable. However, WiMAX is now emerging as a credible backhaul technology.

2.5 For 2.4GHz which of these options do you favour? Are there other viable options that should be considered? Or should regulations be left unchanged?

Regarding device technology, we favour option two. As explained above, we do not believe that it would be difficult to build location-aware devices and we consider that they would solve the problems of enforcement that are inherent in "light licensing" schemes.

Regarding the locations where higher power outputs should be permitted, our preferred option would be neither "hamlets, villages and rural towns" (option 2) nor "all areas except large and major urban conurbations" (option 3). We note that one of Ofcom's motivations for considering increased power levels is a desire to facilitate broadband availability in rural areas. However, ADSL is now available in nearly all rural communities.

The concern now is not so much one of rural access as of "not-spots", scattered areas of the country where broadband is unavailable, either because the local telephone exchange has not been enabled for ADSL or, more typically, because the lines from the exchange to the community are either too long or of too poor quality. Not-spots are certainly found in remote rural areas, but are also often in urban areas. We consider that many not-spot areas would benefit from higher power outputs at 2.4GHz, and that such areas should be included on the database of permitted areas.

The main difficulty with this approach is that, despite various independent attempts, there is no definitive map of where the not-spots are. Although BT's number checker website will give an indication of whether an individual line is suitable for broadband, BT is unwilling to provide a list of not-spots on the basis that this information is "commercially sensitive". Since BT is unable to provide broadband to these areas with its current technology, and since furthermore BT's 21st Century Network (21CN) upgrade will not address line length

issues, we do not see that BT's commercial interests would be prejudiced by releasing information on the locations of not-spots nationwide.

Regarding the choice of an appropriate power limit, we note that Scientific Generics' research was conducted with the aim of improving the business case of rural WISPs, and that the suggested power limit of 10W emerged from this research. We are not convinced that the same power limit would necessarily be appropriate in not-spots, and we would suggest that a modelling exercise be carried out to assess the effect of an increase to 1W or 3W on not-spots before regulations are amended.

We believe that there could be significant benefits in:

(i) Permitting increased power outputs (to a limit yet to be determined) in the 2.4GHz band in selected not-spots nationwide, subject to a survey of likely interference. The ideal source of information on not-spot locations would be BT. We consider that it will be much more beneficial to focus on not-spots rather than on rural areas *per se*.

(ii) Creating a mechanism to add new locations to the database of permitted locations if it could be demonstrated that this would solve broadband availability problems in these areas without causing undue interference. This mechanism would probably comprise some means for residents of not-spots to notify Ofcom, followed by a review process.

(iii) Creating a mechanism to remove locations from the permitted list if it were found that adding them had increased interference to an unacceptable level.

2.6 For 5GHz should Ofcom increase the power to 4W EIRP at 5.8GHz in accordance with ECC Recommendation and as set out in the draft IR2007? Should Ofcom open the database for public access to facilitate coordination?

No opinion.

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