

In the Matter of

Facilitating the Provision of Spectrum-Based
Services to Rural Areas and Promoting
Opportunities for Rural Telephone Companies
To Provide Spectrum-Based Services
WT Docket No. 02-381

- And -

Additional Spectrum for Unlicensed Devices
Below 900 MHz and in the 3 GHz Band
ET Docket No. 02-380

As the network administrator for a wireless internet service provider (WISP) located in western Oregon, I would like to say first how thrilled I am to see the interest expressed by the FCC in facilitating rural broadband access. WISPs are, as you are no doubt aware, at the forefront of the battle to provide universal broadband coverage. I can say from firsthand experience that rural America has entire communities with limited or nonexistent broadband service. Part 15 devices, primarily IEEE 802.11a and 802.11b spread spectrum radios operating on the 2.4 Ghz and 5.x Ghz unlicensed bands, are almost exclusively the mode of choice for new wireless broadband deployments in this sector.

The current regulatory system has been effective largely due to the fact that deployments are not hampered by excessive regulations and costs. I would like to emphasize that the wireless broadband situation is, like any business, entirely market driven. As affairs now stand, it is cost-effective for WISPs to be in business. As a result, wireless broadband is growing all by itself, and rural deployments are occurring as a natural result.

Part of the difficulty faced by growing WISPs is how to pay for the cost of client equipment. If we want to deploy access in a rural community, we can only do so if we have a reasonable assurance that people in that community are willing to pay for the cost of end-user equipment. A typical customer cannot afford more than, say, a few hundred dollars for radio gear. The cost of customer equipment is, in turn, driven by the market the equipment manufacturer has for that equipment. This is why "unlicensed" part 15 bands such as 2.4 Ghz and UNII are so useful. So many people buy the equipment, the cost of the equipment becomes relatively low.

In contrast, this is also why licensed bands are so hard to use in this industry. Even if the requirements and costs are within the grasp of the typical grass-roots WISP, the cost of per-customer equipment is simply too high.

There are a few points that I would like to briefly address.

- 1) Current regulations are effective, but could be improved:
 - Power regulations as specified in 47 CFR part 15.247 are somewhat unclear as to whether the far end (client) of a point-to-multipoint link can be considered a point-to-point station and

accorded higher effective radiated power limits.

- Part 15.204(c) would be easier to follow if it was interpreted to read that other antennas can be used (besides the ones originally certified) so long as the replacement antenna has been shown to operate within the specified limits.

2) Increased spectrum possibilities like those mentioned in FCC 02-328 hold tremendous potential! Last-mile solutions are difficult due to stringent line of sight required by operation at microwave frequencies. Use of lower frequencies for unlicensed operation would mean incredible benefits for the saturated deployment of universal access. The new bands would need to contain sufficient spectrum, however, to make them useful. As technology and deployment progress, consumers have an increasing need for bandwidth. In order for a new allocation to be most useful, it would need sufficient room for data bandwidth on the order of 10-100 megabits/s.

These allocations would also be VERY useful for roaming deployments, for example providing internet data bandwidth to police, fire, and other vehicles on the road where continual line of sight is not possible.

3) One of the major concerns we face is the possibility that someone may come along and, without proper care, build a wireless network that causes excessive interference. Of course, this risk is to a large extent unavoidable, and it is one we willingly face. Nevertheless, it would be helpful if bandwidth were allocated (possibly at high frequency) for exclusively point-to-point communication. This would allow us to deploy backhauls (point-to-point data feeds that supply points of presence) in this spectrum with added assurance that point-to-multipoint deployments would not take them down.

I appreciate the opportunity I have to make the needs of this industry known. If I may be of any assistance, please do not hesitate in contacting me.

Joseph Sullivan
Network Administrator / Alyrica Networks, Inc.