

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

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

REPLY COMMENTS OF THE LICENSE-EXEMPT ALLIANCE

The License-Exempt Alliance (“LEA”) hereby submits its reply comments in response to the Commission’s *Notice of Inquiry* (“*NOI*”) in the above-captioned proceeding.

The LEA is a nationwide coalition of wireless Internet service providers (“WISPs”) and equipment vendors who provide or support the provision of broadband service via license-exempt spectrum in the 902-928 MHz, 2.4 GHz and 5 GHz bands. It has been and continues to be the primary advocate for “last mile” license-exempt broadband providers in a variety of Commission proceedings that directly affect the allocation and use of license-exempt spectrum. For the reasons already set forth by a number of commenting parties in this proceeding, the LEA fully supports the Commission’s efforts to identify opportunities for license-exempt use of television broadcast spectrum below 900 MHz and the 3650-3700 MHz band. The LEA is submitting these reply comments to address certain discrete issues in the *NOI* that are of immediate concern to its constituency.

At the outset, there can be little doubt that the Commission is well aware of the value license-exempt services provide to consumers, and that those services therefore are entitled to consideration where spectrum allocation is concerned. The Commission reaffirmed as much just two days ago in its decision to award the terrestrial amateur radio service primary status in the 2400-2402 MHz band:

Although [the American Radio Relay League] is correct that unlicensed users do not have protection rights vis-à-vis licensed users in a band, it is incorrect when it asserts that we need not consider unlicensed use of this band when deciding whether to modify the allocation. The issue here . . . is whether different uses are compatible and promote efficient use of spectrum. *This analysis requires that we consider both licensed and unlicensed use.*¹

Certainly, the growth of license-exempt “last mile” broadband service warrants the Commission’s inquiry in this docket. According to a recent Cahners In-Stat report, approximately 1,500-1,800 wireless Internet service providers already are providing license-exempt broadband service to approximately 600,000 subscribers in the U.S., with subscribership expected to double by the end of 2003.² Moreover, according to a recent LEA survey, investments in WISPs during 2002 exceeded \$445 million in the United States alone.³ Equally important, the Commission has already observed that “lowerband” wireless service (including that provided via license-exempt spectrum) is uniquely suited for rural areas:

Several smaller fixed wireless carriers, including hundreds of operators using unlicensed spectrum, continue to provide high-speed Internet access service, generally in less densely populated markets across the country Many fixed wireless operators use lowerband spectrum to offer high-speed Internet access in rural and underserved areas. . . In fact, at least one industry analyst claims that, while fixed wireless has the potential to compete with DSL and cable modem service, the technology is best-suited for rural and underserved markets where these services may not be available.⁴

¹ *Amendment of Parts 2 and 97 of the Commission’s Rules to Create a Low Frequency Allocation for the Amateur Radio Service*, ET Docket No. 02-98, at ¶ 45 (rel. May 14, 2003) (emphasis added).

² See http://www.wcai.com/pdf/2003/p_instatmdrJan22.pdf.

³ See Goldman, “VCs Love WISPs,” <http://www.thefeature.com> (Dec. 19, 2002).

⁴ *Implementation of Section 6002(b) of the Omnibus Budget Reconciliation Act of 1993 – Annual report and Analysis of Competitive Market Conditions With Respect to Commercial Mobile Services (Seventh Report)*, FCC 02-179, Appendix A at 6-7 (rel. July 3, 2002) (footnotes omitted).

The LEA therefore takes issue with the suggestion by various television broadcast industry trade associations that license-exempt use of the television broadcast bands in rural areas is a solution in search of a problem.⁵ To the extent that those groups are inferring that the public interest benefits of rural wireless broadband service are not relevant here, they are out of step with the Commission's own findings on the issue:

Despite the upward trend in [broadband] subscription rates for rural communities, we note that a positive correlation persists between population density and the presence of high-speed subscribers. In addition, there continues to be a significant disparity in access to advanced services between those living in rural population centers and those living in sparsely-populated outlying areas. As a result, we believe that it is important to closely monitor the availability of advanced services for rural Americans, especially those living outside of the rural population centers, in order to ensure that they receive timely access to advanced services.⁶

Moreover, there is no public interest justification for the Commission to cast aside the interests of rural wireless broadband providers who already bringing service to consumers with far fewer resources than their wired counterparts. In fact, many WISPs were created precisely because those same wired providers were offering little or no broadband service to their communities. To cite just a few examples:

- **AMA Online** (www.amaonline.com) provides a variety of license-exempt broadband services via a network covering approximately 15,000 contiguous square miles in and around Amarillo, Texas. Utilizing equipment supplied by **Alvarion**, the company reached 2,000 subscribers in just eighteen months and continues to grow at a rate of 30 to 40 customer installations per week. The company provides service to both residential and business customers, reaching speeds equivalent to T1 service (1.5 Mbps).

⁵ See Joint Comments of The Association for Maximum Service Television, Inc. *et al.*, ET Docket No. 02-380, at 17-18 (filed Apr. 17, 2003).

⁶ *Inquiry Concerning the Deployment of Advanced Telecommunications Capability to All Americans in a Reasonable and Timely Fashion, and Possible Steps to Accelerate Such Deployment Pursuant to Section 706 of the Telecommunications Act of 1996 (Third Report)*, 17 FCC Rcd 2844, 2888 (2002).

- ***Prairie iNet*** (www.prairieinet.net) currently provides license-exempt broadband service in the 2.4 GHz and 5.8 GHz bands to approximately 4,500 subscribers, encompassing a total of 127 communities in Iowa, Illinois and Montana. In addition to residential and business customers, the company provides service to schools, medical clinics and municipal governments. The company estimates that it is the sole provider of broadband service in approximately half of its markets.⁷
- ***Suburban Broadband LLC***, recently announced that it has entered into an agreement with ***Waverider Communications, Inc.*** (www.waverider.com) to bring broadband service to 14 counties along the Front Range of Colorado, representing more than 80% of the state's population. Suburban originally launched its wireless broadband service with Waverider equipment in Castle Pines, Colorado, and has quickly expanded its network to serve hundreds of subscribers. WaveRider's Last Mile Solution wireless systems have been deployed by service providers in a total of 43 states, making license-exempt broadband service available to potentially hundreds of thousands of subscribers across the country.⁸
- ***Municipal Wireless*** (www.municipalwireless.com), in cooperation with the Kentucky League of Cities, has embarked on a program to deliver license-exempt broadband service in the 902-928 MHz band to rural communities throughout the State. The company was the first to launch broadband service in Campbellsville, KY, and more communities will have the service available to them in 2003.
- ***Midwest Wireless***, a mobile wireless service provider with over 250,000 customers, has deployed Alvarion equipment to deliver license-exempt broadband service to communities encompassing 3,500 square miles in rural Minnesota. The company has already rolled out the service in 30 communities, many of which have little or no other broadband service.⁹
- ***Northwest Communications***, a local exchange carrier serving in northwest Iowa, offers license-exempt broadband service in all of the license-exempt bands to residential and business subscribers in 22 rural communities from about 30 tower sites. In its original incarnation as a wired telephone company, the company's service

⁷ See <http://www.wcai.com/interview.htm>.

⁸ See also Barthold, "Wireless Internet Opens Communications in Small Iowa Communities," *TelephonyOnline.Com* (Sept. 4, 2002) (discussing Airolink's launch of license-exempt broadband service in rural Iowa communities); Lindstrom, "Driving Profits – Without a License," *Broadband Wireless Online* (October 2001) (quoting Charles Brown, WaveRider's Vice President of Sales and Marketing: "Our typical customers go after and serve second, third and fourth-tier markets with less than 100,000 people in them. These are the markets that the ILECs and cable companies overlook.").

⁹ See press releases at http://www.alvarion.com/RunTime/CorpInf_30130.asp?fuf=270&type=item and http://www.midwestwireless.com/mwc_about/mwc_about_press.asp?NewsDetailId=88.

area encompassed 23 square miles around Havelock, IA. By virtue of its wireless service, the company now operates across thousands of square miles in some 60 communities altogether.¹⁰

- ***YourInter.Net***, a regional WISP in Indiana, is delivering license-exempt broadband service to its customers via non-line of sight technology supplied by ***Navini Networks, Inc.*** The company's current deployment covers the Indiana University of Pennsylvania (IUP) campus, all of Indiana Borough and parts of White Township, PA. Even in sub-optimal conditions, YourInter.Net is able to achieve broadband speeds at distances up to three miles.¹¹
- The city of ***Ellasville, Georgia*** now offers license-exempt broadband service in the 902-928 MHz band via WaveRider equipment. Presently, the city's system uses three transmitting antennas mounted on the city's main water tank, and permits access at speeds exceeding 300 Kbps at a distance of over two miles.¹² Also, WaveRider equipment is being used to build a high-speed wireless network in Fort Valley, Georgia through a project called ***GeorgiaSpeed.Net***. The project arose from a multi-year contract between the Fort Valley Utility Commission and Tri-State Broadband Inc. to install a hybrid fiber-wireless broadband network. The network will bring symmetrical Internet access speeds of up to 1.5 Mbps to Fort Valley and Peach County area businesses and residents.¹³
- ***Office Equipment of Odessa, WA*** has been providing license-exempt broadband service to rural communities in the Pacific Northwest since 1997. Its network presently covers 2,100 square miles in and around Odessa – nearly every community served by the company has a population of fewer than 1,000 people. Among other things, the company donates its service to local law enforcement in Odessa – as a result, police cars in the community have up to T1 speed VPN access directly into law enforcement computer networks. This is believed to be the first project of its type in the State of Washington.¹⁴
- ***Joink, Inc.*** (www.joink.com) provides broadband service in the 902-928 MHz band to rural communities in western Indiana and eastern Illinois. The company has

¹⁰ See Blackwell, "Northwest Communications, Growing Against the Grain," available at http://isp-planet.com/fixed_wireless/business/2002/northwest_comm.html (Aug. 27, 2002).

¹¹ See <http://www.navini.com/pages/pr12.13.02.htm>.

¹² See Mackie, "City in Southwestern Georgia Deploys WaveRider's System," *Broadband Wireless Online* (July 3, 2002); Blackwell, "Small Cities Serve Their Own," www.isp-planet.com (June 25, 2002).

¹³ See http://isp-planet.com/fixed_wireless/wi-fi_briefs/2002/021107.html.

¹⁴ See <http://www.wcai.com/interview.htm>.

already launched the service in eight communities, with plans to add 30 more throughout its region. Joink delivers its service through a network of Authorized Dealers, who provide customers with a local storefront through which they may obtain and pay for service. In addition, Joink has a Broadband Community Alliance program that permits a community leader to bring Joink's service to a small or underserved area.¹⁵

- **REA-ALP** is a utility cooperative in Alexandria, Minnesota serving approximately 7,000 customers. Using equipment supplied by Alvarion and WaveRider, it currently provides license-exempt broadband service via the 2.4 GHz and 902-928 MHz bands, competing with eight ISPs plus local cable modem and DSL service. REA-ALP is able to provide reliable non-line of sight service at distances up to 1.5 miles, and reliable line of sight service at distances up to 4.7 miles.¹⁶

Finally, the notion of licensed and license-exempt services sharing spectrum below 1 GHz is hardly unprecedented. For years the Commission's rules have permitted licensed and license-exempt operations to co-exist in the 902-928 MHz band under rules which preserve the primary status of licensed operations but establish a "safe harbor" which effectively defines the circumstances under which a license-exempt service is causing harmful interference:

To promote cooperative use of the 902-928 MHz band we are elaborating on [the harmful interference] standard to define what is *not* harmful interference from . . . unlicensed Part 15 devices to multilateration LMS systems. This "negative definition" will promote effective use of the 902-928 MHz band by the various services by clearly establishing the parameters under which . . . unlicensed users of Part 15 devices may operate *without* risk of being considered sources of harmful interference to services with a higher allocation status. Part 15 . . . operators who voluntarily operate within [the parameters of Section 90.361] will not be subject to harmful interference complaints from multilateration LMS systems at 902-928 MHz.¹⁷

¹⁵ See <http://www.waverider.com/en/news/releases/release.cfm?id=113>. In addition, Infobahn Outfitters has launched license-exempt broadband service in the 902-928 MHz band in and around Macomb, Illinois. It is the first company to bring broadband services to businesses and residents in Macomb. See <http://www.waverider.com/en/news/releases/release.cfm?id=199>.

¹⁶ See Sanders, "Hybridized 900 MHz NLOS Systems," *Broadband Wireless Business*, at 20 (July/August 2002).

¹⁷ *Amendment of Part 90 of the Commission's Rules to Adopt Regulations for Automatic Vehicle Monitoring Systems (Report and Order)*, 10 FCC Rcd 4695, 4715 (1995); *id.* at 4714 ("We also conclude that effective sharing of the band between . . . Part 15 users and multilateration LMS systems does not (continued on next page)

The LEA looks forward to an ongoing dialogue about the “safe harbor” concept and intends to address the issue in greater detail in its comments on any *Notice of Proposed Rulemaking* issued in this proceeding. At a minimum, however, the LEA believes that the “safe harbor” concept warrants further consideration and review insofar as the television broadcast bands are concerned, as a means of giving both licensed and license-exempt users greater certainty as to their technical obligations to each other in the same spectral space.

Respectfully submitted,
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require a change in the relative status between these two allocations and uses, as some parties have suggested. Rather, we have decided to balance the equities and value of each without undermining the established relationship between unlicensed operations and licensed services.”). *See also* 47 C.F.R. § 90.361.