

since that time. Alvarion received Buy American domestic acceptance from the Department of Agriculture's Rural Utilities Service (RUS) in July of 2008. Alvarion was the first vendor to receive this approval for its 802.16e BreezeMAX platform which operates at 2.3 GHz and 2.5 GHz.² Alvarion recently received Buy American acceptance for its BreezeMAX 3650 platform. With more than 250 commercial WiMAX networks deployed worldwide in over 100 countries,³ Alvarion's WiMAX base stations are the world's most-deployed WiMAX radio access network equipment.⁴

Open Range Communications recently selected Alvarion as its equipment vendor and turn-key solution provider to build WiMAX networks and deploy broadband in over 500 communities in 17 states with the assistance of a \$266 million loan approved by RUS. While this is a large task, Alvarion has a proven track record of success. In 2008, DigitalBridge Communications Corp. selected Alvarion as its partner in deploying 802.16e upgrades, the first of its kind in North America, on its network, which now extends to over 15 rural markets.

II. WIRELESS BROADBAND TECHNOLOGY LIKE WIMAX IS THE BEST TECHNOLOGY FOR THE CONTINUED EVOLUTION OF OUR NATION'S BROADBAND INFRASTRUCTURE.

Answering the FCC's question about whether there are certain advanced broadband technologies that might better position the nation's broadband infrastructure for continued

¹ *National Broadband Plan for Our Future*, Notice of Inquiry, 24 FCC Rcd 4342 (2009) ("NOI").

² See Press Release, Alvarion, Inc., Alvarion's BreezeMAX Receives USDA's WiMAX Rural Development Acceptance for 3.65 GHz Frequency (April 1, 2009), <http://www.alvarion.com/presscenter/pressreleases/182435/>.

³ The operators that Alvarion works with in these countries include: Telkom South Africa, Enforta (Russia), Iberbanda/Telefonica (Spain), Altitude Telecom (France), Cable and Wireless, WiMAX Telecom (Austria), Aircell (India), Elro (Denmark), Access Kenya, Racsa (Costa Rica), Telmex (Mexico), Ertach (Argentina), Kenya Data Networks.

⁴ Press Release, Alvarion, Inc., Alvarion Demonstrates the Latest in 4G Wireless Broadband at Mobile World Congress (Feb. 12, 2009), available at <http://www.alvarion.com/presscenter/pressreleases/180767/>. Wireless broadband and voice connectivity solutions offered by Alvarion for fixed, nomadic and mobile communications have already been deployed by service providers which include Bharti, MTN Uganda, Telecom Namibia, Digicel, TDS, Mainstreet Broadband and many others.

evolution, Alvarion urges the Commission to consider wireless broadband technology like WiMAX as critical to the continued evolution of our broadband infrastructure.

A. Wireless Broadband is the Most Future-Proofed Solution for Bringing Quality Broadband Service to the Whole Nation.

Of the hundreds of comments filed in response to the FCC's NOI about a National Broadband Plan on June 8, 2009, there were approximately 266 substantive comments. Of these 266 comments, almost one-third of the commenters, approximately 87 comments, touted the benefits of wireless broadband as the advanced technology that will best position the nation's broadband infrastructure for continued evolution.⁵ Wireless broadband technology is the most

⁵ Comments of Alcatel-Lucent; Comments of American Consumer Institute; Comments of APCO; Comments of AT&T Inc. ("AT&T"); Comments of Benton Foundation; Comments of CDMA Development Group; Comments of The Center for Accessible Technology/Inclusive Technologies; Comments of Center for Democracy & Technology; Comments of Cisco Systems, Inc.; Comments of Clearwire Corporation ("Clearwire"); Comments of Comcast Corporation ("Comcast"); Comments of Competitive Enterprise Institute; Comments of COMPTEL; Comments of Computer & Communications Industry Assoc.; Comments of Consumer Electronics Association; Comments of Consumer Federation of America and Consumers Union ("Consumer Federation"); Comments of Cricket Communications, Inc.; Comments of CTB Group, Inc.; Comments of CTIA - The Wireless Association; Comments of Dell Inc.; Comments of Diana Warren; Comments of Doug Power; Comments of EDUCAUSE; Comments of Elliott H. Drucker; Comments of EMR Policy Institute; Comments of The Enterprise Wireless Alliance; Comments of Ericsson Inc.; Comments of Expand Networks, Inc.; Comments of FiberTower Corporation; Comments of Free Press; Comments of Grant County, Washington State, Sheriff's Office; Comments of GVNW Consulting, Inc.; Comments of IEE-USA's Committee on Communications Policy; Comments of Johannes M. Bauer; Comments of LARIAT (Laurence Brett Glass); Comments of Mobile Future; Comments of Motorola, Inc.; Comments of MSS/ATC Coalition; Comments of National Association of State Utility Consumer Advocates; Comments of National Cable & Telecommunications Association; Comments of National Consumers League; Comments of National EBS Association ("NEBSA"); Comments of National Exchange Carrier Association, Inc.; Comments of National Radio Astronomy Observatory; Comments of National Rural Electric Cooperative Association ("NRECA"); Comments of National Rural Telecommunications Cooperative ("NRTC") and DigitalBridge Communications ("DBC"); Comments of National Telecommunications Cooperative Association; Comments of Native Public Media and the National Congress of American Indians; Comments of NATOA *et. al.*; Comments of NENA; Comments of New America Foundation; Comments of New EA, Inc. dba Flow Mobile; Comments of New York Public Service Commission; Comments of OPASTCO; Comments of PCIA--The Wireless Infrastructure Association/The DAS Forum; Comments of Public Knowledge, Media Access Project, New America Foundation, U.S. PIRG; Comments of PureWave Networks ("PureWave"); Comments of QUALCOMM Incorporated; Comments of Qwest Communications International Inc.; Comments of Rural Cellular Association ("RCA"); Comments of Rural Internet and Broadband Policy Group; Comments of Rural Telecommunications Group, Inc.; Comments of Southern Company Services, Inc.; Comments of Spacenet Inc.; Comments of Sprint Nextel Corporation; Comments of Stratum Broadband; Comments of TCA-Telecom Consulting Association; Comments of TDS Telecommunications Corporation; Comments of Telecommunications Industry Association; Comments of Time Warner Cable Inc.; Comments of T-Mobile USA, Inc.; Comments of United States Telecom Association; Comments of USA Coalition; Comments of Utilities Telecom Council and Edison Electric Institute; Comments of Utopian Wireless Corporation; Comments of Verizon and Verizon Wireless; Comments of Vermont Public Service Board; Comments of W. Kenneth Ferree and Barbara Esbin; Comments of Western Telecommunications Alliance; Comments of Wired.com; Comments of Wireless Communications Association International ("WCAI"); Comments of Wireless Internet Service Providers

technologically advanced platform for bringing broadband service to the entire country, including rural and remote areas.⁶ Recent advances in WiMAX wireless technology are targeted specifically at bringing broadband service to rural markets.⁷ Comcast recently announced it will offer WiMAX mobile broadband service at speeds of up to 4 Mbps.⁸ Wireless broadband solutions, like WiMAX, are future-proofed and can be easily upgraded to include mobility or additional system capacity, enhancing performance of the system without the need to dig up streets and upset the environment. Many providers have already upgraded their wireless systems to the newest generation WiMAX platform, all without having to change or remove any hardware.⁹ The standards-setting community anticipates that the WiMAX infrastructure deployed today, is capable of reaching speeds exceeding 25Mbps per sector, and system capacity will be increased fourfold without any stranded capital investment.¹⁰ Wireless technologies, like WiMAX, will play a critical role in the continuing development of the Nation's communications capabilities.¹¹

B. Alvarion's Open WiMAX Creates an Open IP-based Internet Model.

To solve the issue of bringing broadband access to a Nation with diverse topography and often challenging propagation, Alvarion believes that mobile WiMAX technology, with its open standards and all-IP architecture, its high-capacity, wide coverage, and its quality of service, is best suited to address the needs of the nation.

Association; Comments of Wireless RERC; Comments of XO Communications, LLC; Comments of Yaana Technologies LLC; Comments of ZeroDivide; Comments of ZOOM.

⁶ Comments of Clearwire at 1.

⁷ Comments of Competitive Enterprise Institute at 1; Comments of NEBSA at 2-3.

⁸ Comcast Launches First Wi-Max Market, <http://www.wimax.com/commentary/blog/blog-2009/june-2009/comcast-launches-first-wimax-market-0630> (June 30, 2009) (Comcast's High-Speed 2go mobile broadband service offers speeds up to 4 Mbps to laptops, netbooks and other mobile wireless devices.).

⁹ See Comments of NRTC and DBC at 12, Clearwire at 2-3.

¹⁰ See WiMAX Forum, Requirements and Recommendations For Released I.X WiMAX Forum Air Interface, Version 1.8, www.wimaxforum.org/sites/wimaxforum.org/files/documentation/2009/080717_Rel1.x_Air_IF_Requirement.pdf.

¹¹ Comments of RCA at 7.

A further benefit of Alvarion's version of WiMAX, "Open WiMAX", is the disruptive operator-centric culture that the Open WiMAX standard is bringing to the telecom market. Typically, large telecom equipment vendors have chosen to be standards-based, but then choose to develop particular solutions with the goal of controlling the interfaces and interoperability of their standards-based solutions in a closed environment. Such an environment is not always a best fit for the needs of the service provider, as it creates a high dependence on the selected vendor.

Unlike the traditional telecom model of "one vendor does it all" philosophy,¹² Alvarion's Open WiMAX is focused on an open IP-based Internet model. With Open WiMAX, operators will choose the combination of vendors and partners that best fit their specific requirements and achieve the benefits that open access and interoperability will bring to the service provider's cost structure and operating efficiencies.¹³ Alvarion's network and equipment do not restrict the operator's ability to provide an open network. In turn, operators deploying open networks will allow customers to use the device, application, or service they choose. RUS and the Department of Commerce's National Telecommunications and Information Administration (NTIA) recently released their Notice of Funds Availability, adopting strict interconnection and non-discrimination obligations and requiring open networks.¹⁴ RUS and the NTIA make clear that an open network is of paramount importance for future networks. Therefore, open technologies should receive preferential consideration when the Commission develops the National Broadband Plan.

¹² Open WiMAX is an all-IP open architecture for WiMAX access networks, which is endorsed by the WiMAX Forum™ and complies with the WiMAX Forum's Networking Work Group (NWG) specifications, and is designed as an open, standardized, interoperable technology. Alvarion's Open WiMAX solution is a complete ecosystem based on three fundamentals: scalability, making it equally suitable for large, medium or small deployments; cost optimization, allowing operators to control network deployment costs; and application driven, enabling simple integration with third party applications and services.

¹³ See Comments of PureWave Networks at 2-3.

¹⁴ Notice of Funds Availability, 74 Fed. Reg. 33,104 (July 9, 2009).

One-third of the commenters in this proceeding agree that wireless broadband technology is the best solution to ensure broadband access throughout the country.¹⁵ With the advantages of an affordable, easily upgradeable network, and a customer-driven open network, Alvarion's Open WiMAX is advanced technology that will ensure wireless broadband networks are widely deployed, open, cost-efficient, and accessible to all consumers across the nation.

III. WIRELESS BROADBAND TECHNOLOGY IS THE MOST COST-EFFECTIVE, COST-EFFICIENT SOLUTION FOR SATISFYING THE NEEDS OF THE NATION.

Wireless broadband networks, like WiMAX, are the most effective and efficient means of delivering broadband throughout the country. As the Computer & Communications Industry Association commented, "mobile wireless broadband can be an affordable and flexible solution that offers numerous benefits."¹⁶ The following factors contribute to making WiMAX the most cost-effective, cost-efficient solution to wireless broadband deployment: (1) the simplicity and flexibility of the architecture; (2) the ease by which it can be deployed; (3) the reliability, sustainability, and high-quality of the service; and (4) the ability to serve the needs of residential consumers, business customers and anchor institutions. Advanced wireless technologies are extremely low in cost compared to cable and satellite options and deliver both mobile computing and broadband service that meets the needs of Americans at prices they can afford.¹⁷ Wireless broadband deployments are the "now" and the "future" of our Nation's access to broadband.¹⁸

¹⁵ See list of commenters *supra* note 5.

¹⁶ Comments of Computer & Communications Industry Association Comments at 17. See also Comments of Competitive Enterprise Institute at 3; Comments of Consumer Federation at 13; Comments of WCAI at 11-12 ("WCAI").

¹⁷ Consumer Federation at 13; Comments of Motorola, Inc. at 2 ("Wireless solutions provide a cost effective method of providing broadband services and may be the only practical alternative in doing so in some areas and situations."); Comments of National Consumers League at 6-7; PureWave at 4.

¹⁸ See Comments of PCIA at 3; see also Philip J. Weiser, *A Framework for a National Broadband Policy*, Aspen Inst. (2008) at 22 (quoting Professor Werbach), available at <http://www.aspeninstitute.org/policy-work/communications-society/programs-topic/communications-policy/roundtable-spectrum-policy-a>. "Bolstering this argument, one study

A. WiMAX is a Proven, True Broadband Technology That is Commercially Available Today.

The Commission should adopt technologies that are affordable and have a proven history of success. The Consumer Federation of America and Consumers Union rightly identified why wireless broadband technology, like WiMAX, is the preferred solution for the National Broadband Plan: (1) “[a]dvanced wireless is far less expensive, while meeting the need for broadband connectivity, promoting greater coverage”; (2) “[t]he technology is suited to both rural high-cost and urban low-income areas”; and (3) “[t]he potential for development to higher levels of functionality is substantial”.¹⁹ As they put it, “[e]volution to 10 or 20-megabit speeds is on the horizon.”²⁰

Not only is WiMAX affordable and flexible, but it has a proven history of success in all topographies. Based upon the harmonized IEEE 802.16/ETSI HiperMAN standard, the WiMAX ecosystem consists of more than 500 service providers, component manufacturers, and equipment companies. Additionally, through the WiMAX Forum, strict certification processes are mandated to ensure that all equipment is fully-interoperable and supportive of broadband fixed, portable and mobile services.²¹ WiMAX today enjoys broad market adoption with over 455 networks deployed

conducted by industry veterans suggests that WiMAX, “if deployed and marketed correctly, is a truly disruptive technology that could unseat the telco-cable duopoly and provide consumer choice in broadband services.” *Id.* (quoting Carol Wilson, *WiMAX Truly Disruptive if Marketed Well, Study Says*, Telephony Online, July 23, 2007, *available at* http://telephonyonline.com/wimax/technology/wimax_disruptive_study_072307).

¹⁹ Consumer Federation at 22-23; *see also* Comments of New America Foundation at 15.

²⁰ Consumer Federation at 23; *see also* NEBSA at 2.

²¹ *See* J. Exp. Stat. at 149; Food, Conservation and Energy Act of 2008, Pub. L. 110-246, 122 Stat. 1651 (2008); *see also* Food, Conservation, and Energy Act of 2008, Conf. Rep. No. 110-627, at 834 (2008) (*emphasis added*). Conferees stated that the Secretary of Agriculture is expected to “consider the unique way of life in rural America and to be mindful that *mobile broadband technologies* are applicable to farmers, ranchers, and small rural business owners. *Fixed broadband service will continue to be important in rural homes and offices, but mobile technologies also may have a role to play in expanding broadband access to rural residents.* The Managers expect the Secretary to weigh all appropriate technologies, including the unique characteristics of mobile broadband service and technologies, during consideration of applications.”

in over 135 countries, at speeds of up to 4 Mbps today.²² WiMAX is the most proven and affordable technology to deliver broadband to a diverse topography.²³

B. Wireless Broadband Can Fulfill the Needs of Multiple Subscriber Segments Through a Single Network.

In addition to broadband service to residential customers in various parts of the nation, a National Broadband Plan must include broadband service to anchor institutions like schools, libraries, health care facilities, and public safety operations. WiMAX is a cost-effective, reliable, and scalable IP-based solution for serving consumers and small businesses, and such capabilities are readily extended to the healthcare and education segments²⁴ and to smart grid applications. The National Rural Electric Cooperative Association provided a perfect example of how sufficient access to wireless broadband improves quality education.²⁵ In less than 5 years, wireless broadband technology helped a rural town improve SAT scores by 41 points, and applications for college tripled.²⁶ Also, smart grid and meter reading applications can be complimentary to broadband access services, using one infrastructure and improving the overall business case.

As a fully-mobile technology with advanced security, bandwidth management, and quality of service functionality, WiMAX also is ideally suited for public safety applications which require the ability to prioritize traffic, and provide for flexible, application-centric download and upload

²² See Comments of Comcast at 42-43; see also, Press Release, AT&T, Inc., AT&T To Deliver 3G Mobile Broadband Speed Boost (May 27, 2009), available at <http://www.att.com/gen/press-room?pid=4800&cdvn=news&newsarticleid=26835>. (AT&T recently announced that it will be upgrading its 3G wireless broadband service that potentially can deliver speeds of 7.2 Mbps).

²³ See Computer & Communications Industry Association at 6, New America Foundation; NEBSA at 2.

²⁴ See Comments of Mobile Future at 9-10.

²⁵ Comments of NRECA at 16, n. 37 (“In the 1990’s, tobacco dependent Greene County, N.C. showed high rates of poverty, outmigration, brain drain and low educational attainment. In 2003, the county invested in a community wireless Internet system and gave every student in grades 6-12 laptop computers. In less than five years, Greene County’s high school SAT composite scores rose 41 points and applications for college tripled and more than 12 new businesses opened.”).

²⁶ *Id.*

transfer rates.²⁷ The tier of service controls within WiMAX readily enables service providers to create different pricing mechanisms to service low-income, aged, or other vulnerable segments of the population.

C. WiMAX Can Be Deployed More Rapidly Than Other Available Broadband Technologies.

WiMAX can be rapidly deployed on readily available cellular towers. There are no cables to bury or hang on poles and no satellites to launch. Further, in combining WiMAX access technology with wireless middle-mile backhaul solutions and a flat, all-IP network architecture, complete networks can typically be deployed in nine months or less.²⁸ “The flexibility of wireless service supplements and enhances wired options available to consumers and competition can make all broadband offerings more affordable and more effectively utilized.”²⁹ As the National Rural Electric Cooperative Association noted, “[r]eaching ... rural communities via wireline technologies would be prohibitively expensive in many areas.”³⁰ WiMAX further enables trade-offs between coverage and capacity, so a service provider can maximize the reach of its network in the initial launch phase and progressively enhance network capacity as customer demand increases.

IV. CONCLUSION.

All Americans, urban and rural, must be able to enjoy the benefits of the most advanced, future-proofed, interoperable broadband technology available today. WiMAX is an ideal technology to quickly and cost-efficiently deploy robust wireless broadband services to the nation. Alvarion whole-heartedly agrees with Mobile Future that “[m]obile broadband technologies will

²⁷ See Comments of Mobile Future at 8; New America Foundation at 11 (“The Department of Transportation (DOT) has expressed serious interest in utilizing wireless communications for an intelligent transportation system to manage traffic flows and improve safety.”).

²⁸ See e.g., DBC at 11; see PureWave at 4-5.

²⁹ NEBSA at 3.

³⁰ NRECA at 12.

unquestionably play a central role” in achieving the Commission’s list of public policy goals; “thus, the Commission must scrupulously incorporate and support mobile broadband as part of the National Broadband Plan.”³¹ Even the Commission has recently touted the benefits of wireless broadband technology. In its Report on a Rural Broadband Strategy, the Commission stated wireless technologies are extending broadband into areas unreachable by cables and wires, and enabling consumers to be connected while on the move.³² To ensure ubiquitous broadband coverage in our Nation, and the efficient evolution of our broadband infrastructure, the Commission should view wireless broadband technologies like WiMAX as an essential tool to a National Broadband Plan.³³

Respectfully submitted,

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³¹ See Mobile Future at 7.

³² Federal Communications Commission, Bringing Broadband to Rural America: Report on a Rural Broadband Strategy, ¶10 (May 22, 2009); See RCA; PCIA.

³³ PureWave at 1; WCA at 15-17.

CERTIFICATE OF SERVICE

I, Peter Andros, certify on this 21st day of July, 2009, a copy of the foregoing Reply Comments has been served via electronic mail or first class mail, postage pre-paid, to the following:

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