



November 2, 2018

Ex Parte

Marlene Dortch, Secretary
Federal Communications Commission
445 12th Street SW
Washington, DC 20554

Re: ET Docket No. 16-56, ET Docket No. 14-165, MB Docket No. 15-146, RM-11745, GN Docket No. 12-268

Dear Chairman Pai, Commissioner O’Rielly, Commissioner Carr, and Commissioner Rosenworcel:

We are a group of forty-four (44) companies and organizations working across the country to develop technology and expand broadband in rural America. Our communities are often remote, thinly populated, and geographically challenging. But we are committed to serving more Americans living in these areas and bringing them broadband, and we are making real and tangible progress. An important part of our effort is the use of White Spaces technologies. These technologies are ideal for delivering broadband to our communities because they operate on low frequencies that allow us to cover very large areas economically.

As network operators, equipment providers and rural broadband advocates, we are working together to provide broadband to people we could not serve without White Spaces technology. We appreciate the FCC’s efforts to date to make this possible.

But with your help we can go further. Our deployments are giving us real-world experience in how a set of pragmatic changes to FCC rules would allow us to reach even more Americans, without causing harmful interference to incumbent licensees. Microsoft filed a letter with the Commission on October 2 describing these ideas and why they are so important. We therefore write to you today to request that you issue a Further Notice of Proposed Rulemaking in your existing White Spaces docket that proposes to adopt these improvements. Specifically, we request that you propose:

1. Higher power for fixed devices in rural areas where we can operate without causing harmful interference to broadcasters;
2. Antenna placement at larger heights above average terrain governed by a new protection mechanism;
3. Narrowband IoT operations to support important applications such as precision agriculture and environmental sensing; and
4. Geofenced operation on moving vehicles.

We share your goal of expanding broadband to every American and appreciated the opportunity to talk with your staff about how we are evolving TV white spaces technology and leveraging it to provide broadband



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to consumers in rural America. Considering the improvements noted above in a further notice will give us the chance to show you how these powerful new tools can advance broadband connectivity in rural America. Thank you for your consideration.

Sincerely,

Carri Bennet, General Counsel, RWA – The Rural Wireless Association
Aaron Bennett, VP-Fixed Wireless, Pulse Broadband
Bill Brown, President/ CEO, Metric Systems Corporation
Jim Carlson, CEO & President, Carlson Wireless Technologies Inc.
Pasquale Cataldi, Head of Wireless Technology, Nominet
Jim Connor, CEO, BridgeMAXX
James DaBramo, COO, LICT Corporation
Tad Deriso, President & CEO, Mid-Atlantic Broadband Communities Corporation
Jonathan Dowler, Director of Sales & Marketing, Virginia Broadband
Fred Engelmann, Principal Consultant, Adirondack Internet & Rainmaker Network Services
Lowell Feldman, CEO, Evolve Cellular
Robert Foster, CEO, Auton Inc.
Vern Fotheringham, CEO, ARK Mediacom, Inc.
Craig E. Gates, CEO, Hill Country Electric Cooperative and Triangle Communications
Ryan Guerra, Founder & CEO, Skylark Wireless
Tom Harshbarger, Senior Director, Cloud Platform and Services, Synnex
R. Cory Heigl, Vice President, Packerland Broadband at CCI Systems, Inc.
Kari Hoffman, General Manager, Network Business Systems Inc.
Steve Hubbard, CEO, RTO Wireless
Greg Jarman, COO, Watch Communications
Mark Kimball, Co-Owner, Essex Farm
Jeff Kohler, Founder & Director, JAB Wireless, Inc. d/b/a Rise Broadband
Emmanuel Lelekis, Founder & CTO, Point Broadband
Dale Merten, VP & COO, ToledoTel
Andrew Metcalfe, CEO, Native Network, Inc.
Peg Molloy, President & CEO, VistaLifeSciences, Inc.
Adi Nativ, VP, Global Business Development, RADWIN
Bob Nichols, CEO, Declaration Networks Group, Inc.
Mark Ouellette, CEO, Axiom
Heng Pan, CEO, HuWoMobility
Kyle Quillen, Founder & CEO, Agile Networks
Matthew Rantanen, Director of Technology, Tribal Digital Village
Joseph Sawasky, President & CEO, Merit Network, Inc.
Beth Schiller, Owner, CvWireless LLC
William Seiz, Manager, Final Mile Communications Inc.



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Garrett Shankle, Director of Technology, Virginia Broadband , LLC (VABB)
Ted Solomon, VP of Strategy and Corporate Development, National Rural Telecomms. Coop. (NRTC)
Dan Spray, President, Precision Technology Inc.
Haiyun Tang, Founder & CEO, Adaptrum
Gino Villarini, Founder & President, Aeronet Wireless Broadband Corp.
Caleb Weiss, VP of Network Operations, Edge Spectrum Inc.
Simon Westlake, CEO, Sonar Software
Thomas Whitehead, VP, Federal Government Affairs, Windstream
Robert S. Wu, Founder & CEO, 6Harmonics