Before the
Federal Communications Commission
Washington, D.C. 20554

In the Matter of	)	
	)	
Promoting More Efficient Use of Spectrum	)	ET Docket No. 10-237
Through Dynamic Spectrum Use Technologies	)	

To: The Commission

COMMENTS OF THE WIRELESS INTERNET SERVICE PROVIDERS ASSOCIATION

The Wireless Internet Service Providers Association ("WISPA") hereby provides its Comments in response to the Notice of Inquiry ("*NOI*") in the above-captioned proceeding.[1] As discussed below, WISPA believes that expanded use of dynamic spectrum access technologies will promote spectrum sharing and more efficient spectrum use, and will also create secondary market opportunities for spectrum to benefit the public. Accordingly, the Commission should initiate a rulemaking proceeding to create a full and complete record on specific rules that should be adopted.

Introduction

Founded in 2004, WISPA is a trade association of more than 500 wireless Internet service providers ("WISPs"), vendors and others dedicated to promoting, improving and expanding fixed wireless broadband service nationwide. WISPs serve more than two million residential and business customers and operate in every state. Most WISPs operate using the license-exempt bands (e.g. 900 MHz, 2.4 GHz and 5 GHz) and in the 3650-3700 MHz "licensed-lite" band to serve rural communities and other areas that

[1] *Promoting More Efficient Use of spectrum Through Dynamic Spectrum Use Technologies*, ET Docket No. 10-237, rel. Nov. 30, 2010 ("*NOI*").

would otherwise be unserved, and where few if any broadband alternatives exist. The majority of WISPs are "small businesses," as defined in the Small Business Act.

Discussion

WISPA appreciates this opportunity to submit Comments supporting the expansion of dynamic spectrum access. WISPA applauds the Commission's desire to foster more efficient utilization of our nation's spectrum resources. More efficient use of spectrum that is currently unused or underused can play an important role in meeting the unmet fixed wireless broadband needs of many citizens who today have little or no access to broadband.

Another term for dynamic spectrum access is "shared spectrum access." As the *NOI* correctly observes, several types of shared spectrum access are in use today.[2] Some data is currently available regarding the use of these methods. For instance, unlicensed use of 255 MHz of spectrum in the 5470 – 5725 MHz Unlicensed National Information Infrastructure (*U-NII*) Band is shared with military and weather radar systems. Operators are required to employ dynamic frequency selection ("DFS"), which has proved to be generally effective in facilitating spectrum sharing. While there have been some instances of interference to weather radar stations, cooperation between operators, the wireless industry, the Commission, the NTIA and the FAA has resulted in significant progress to successfully address this issue. Use of DFS-based shared-spectrum techniques may require a continuing, collaborative effort to assure that DFS detection and avoidance techniques are continually updated and supported. WISPA believes that ongoing collaboration and coordination is a small price to pay in return for allowing productive use to be made of this valuable and useful spectrum range.

[2] *See NOI* at ¶ 4.

The 3650 – 3700 MHz band is another example of shared spectrum being used today. Here, contention-based protocols are used to minimize potential interference between unlicensed operators. Contention-based technology can minimize inter-network and inter-operator interference; however, in practice, the delays introduced when one network must wait while another network completes use of the frequency often result in slow or unreliable broadband service delivery. WISPA suggests that while contention-based spectrum sharing may be practical for low bandwidth applications and for the delivery of time-insensitive data, contention-based spectrum sharing is not well-suited for the reliable delivery of high-bandwidth, time- and latency-sensitive broadband data.

Operators in the 3650 – 3700 MHz band are also required to abide by so-called "lite-licensing" rules. Each operator must obtain a low-cost nationwide license and must register its base stations and fixed customer locations in the Commission's ULS database. Operation in areas where satellite earth stations exist requires obtaining permission from that earth station before deploying base station or customer equipment. WISPA notes that there are substantial improvements that can be made both in the operating practices and in the operating rules for this band. Addressing the shortcomings and improving the operating rules for this band may be the subject of a future petition seeking improvements to the rules for this service.

Geo-location-based spectrum sharing is mandated in unlicensed TV White Space spectrum. Work is currently underway to bring the database systems online and into public use. The geo-location database concept is one that WISPA strongly supports. Database-driven spectrum sharing will enable many additional, beneficial, opportunistic uses for spectrum.

Without adequate spectrum, WISPs cannot survive, but spectrum alone is not the only need that WISPs have. In addition to spectrum, WISPs need practical operating rules that work in the real world. Operating rules that are too restrictive can prevent productive use of otherwise available spectrum. Much work and effort has gone into preparing TV White Space spectrum for productive, shared use, but the imposition of a rule limiting antenna tower base elevations to no more than 76 meters height above average terrain (HAAT) unnecessarily limits or prevents the deployment of TV White Space networks on existing towers in many hilly and mountainous parts of the country.[3] Correcting this unduly restrictive tower location limitation is the subject of a Petition for Reconsideration jointly filed by WISPA and others[4] and is an example of the need for thorough, real-world deliberation and consultation on the part of the Commission to assure that practical and effective real-world operating rules accompany each shared-spectrum allocation.

WISPA's comments in the National Broadband Plan Wireless Innovation Notice of Inquiry[5] highlighted the tremendous benefits that unlicensed spectrum have brought in terms of innovation and productive spectrum use. It can be said that in the last fifteen years, a majority of the technical advances in wireless technology that we enjoy today have taken place because of the availability of unlicensed spectrum. The tremendous success of Wi-Fi as we know and use it today could not have taken place without the allocation and use of the unlicensed 2.4 GHz ISM band. WISPA believes that the more spectrum that is made available as unlicensed, as lightly-licensed and as dynamically-

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[3] *See* Sections 15.709(b)(2), 15.713(e)(6) and 15.712(a)(2).
[4] *See* Joint Petition for Partial Reconsideration filed by WISPA, *et al.*, ET Docket Nos. 04-186 and -2-380, filed Jan. 5, 2011.
[5] *See* WISPA's Comments in response to *Fostering Innovation and Investment in the Wireless Communications Market; A National Broadband Plan for Our Future*, FCC 09-66, GN Docket No. 09-157; GN Docket No. 09-51 (rel. Aug. 27, 2009).

accessible shared spectrum, the greater the benefits will be to people, to industry and to government. Moreover, countries and peoples around the world look to the United States for leadership. Beneficial use and development of unlicensed spectrum in the U.S. will lead to beneficial use of unlicensed spectrum around the world.

WISPA asks that more shared and dynamically allocated spectrum be made available license-free with appropriate, real-world technical rules to further enable the reliable delivery of broadband services to people everywhere. To further this goal, WISPA urges the Commission to develop a full and complete record with regard to dynamic spectrum access and, toward this end, to initiate a proposal for rulemaking on this topic.

Respectfully submitted,

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