

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

In the Matter of)	
)	
Unlicensed Operation in the TV Broadcast Bands)	ET Docket No. 04-186
)	
Additional Spectrum for Unlicensed Devices)	ET Docket No. 02-380
Below 900 MHz in the 3 GHz Band)	
)	

REPLY COMMENTS OF SPECTRUM BRIDGE, INC.

As the record submitted in response to the Commission’s white spaces database Public Notice¹ makes clear, authorizing multiple administrators that communicate using open protocols is the best means of ensuring that the white spaces are used effectively and efficiently. Spectrum Bridge believes it is well qualified to work with the FCC and other administrator candidates to help realize this goal.² Spectrum Bridge writes in reply to address certain questions raised in this proceeding regarding its proposal, and to highlight actions the Commission should take to maximize use of the white spaces.

1. The Commission Should Not Mandate a Single Data Clearinghouse for All Administrators.

As Spectrum Bridge has previously explained, creating a single data clearinghouse or repository will result in less efficient use of the white spaces.³ These concerns are shared by the majority of database administrator candidates, the IEEE, as well as the majority of device

¹ *Office of Engineering and Technology Invites Proposals from Entities Seeking to be Designated TV Band Device Database Managers*, Public Notice, ET Docket No. 04-186, DA 09-2479 (rel. Nov. 25, 2009) (“*Public Notice*”).

² *See generally* Spectrum Bridge response to PN DA-09-2479 – Proposals for Designated TV Band Database Manager, ET Docket No. 04-186 (filed Jan. 4, 2010).

³ *See, e.g.*, Comments of WSdb LLC, Frequency Finder Inc., KB Enterprises LLC, Key Bridge Global LLC, Spectrum Bridge, Inc., and Telcordia Technologies (filed Feb. 12, 2010).

manufacturers, many of whom are founding members of the White Spaces Coalition and White Spaces Database group.⁴ Although Spectrum Bridge takes no position regarding the technical issues involved in setting up a single clearinghouse, it is clear that such a mandate would create significant challenges for database administration.

First, a single repository will constrain innovation. The success of the Commission's Part 15 rules in the ISM bands is particularly instructive in this regard. There, the Commission did not mandate the use of a particular architecture, but rather adopted flexible operating rules that allowed industry to develop numerous applications and services using Wi-Fi, Bluetooth, and other technologies. The white spaces represent a unique opportunity to implement approaches that will dramatically increase spectrum availability and utilization while protecting incumbent licensees, and these technologies should be allowed to flourish.

In addition, mandating a single repository completely rules out certain database solutions, including "end-to-end" database offerings. Thus, requiring a single repository creates the risk of a de-facto monopoly that could preclude new entrants from participating at all. At best, mandating a single repository will restrain competition among database providers. This restriction would work to the detriment of consumers, and should be rejected.

⁴ *See id.* *See also* Comments of IEEE 802.18 (filed Feb. 2, 2010) at 2 ("IEEE 802.18 recommends that the Commission authorize multiple database providers, rather than just one provider, to create competition among the database managers on pricing, encourage innovation, and create an environment where service reliability becomes an important factor in the service offering."); Comments of Atheros Communications, Inc., Broadcom Corp., Dell Inc., Hewlett-Packard Co., Marvell Semiconductor, Inc., Microsoft Corp., Motorola, Inc., Nokia Inc., Philips Electronics North America Corp., and the Wireless Internet Service Providers Association (filed Feb. 9, 2010) at 3 ("*TVWS Group Comments*").

2. **Spectrum Bridge Will Provide a Robust Public Interface to its Database.**

Some parties have raised questions regarding the range of information that should be made available through public interfaces to a white spaces database.⁵ Spectrum Bridge agrees that if information is available to the public from other sources, including FCC databases, this information also should be directly available through the public interface provided by a white spaces database administrator. However, in cases where information is not publicly available, or where other privacy rules prevail (such as individual names and/or contact information), this information should not be added to the public interface.

The showmywhitespace.com website operated by Spectrum Bridge provides a proof of concept for public interface approaches. This interface provides information about *potentially* usable white spaces for a given address. However, the interface does not represent the data as it would be provided to a television band device (“TVBD”), nor does it take into account numerous variables, including device type (fixed vs. personal/portable) and antenna information. Rather, the website interface uses only location information based on a physical address.

The capabilities of this interface could be enhanced to offer more specific services and data as required by the Commission. But for now, the showmywhitespace.com interface remains an experimental system that cannot incorporate the final rules until the Commission resolves the pending requests for reconsideration and other issues in this proceeding – a point that MSTV’s response did not mention.⁶ However, Spectrum Bridge agrees with MSTV that a database should incorporate a rigorous test suite and that administrators must be able to respond to issues and corrections. Spectrum Bridge is committed to doing so.

⁵ See, e.g., Comments of the Public Interest Spectrum Coalition (filed Feb. 12, 2010) at 9-14.

⁶ See Comments of the Association for Maximum Service Television, Inc. and the National Association of Broadcasters (filed Feb. 12, 2010) at 17-19 (“*MSTV Comments*”).

3. The Public Notice Does Not Require Database Administrators to Verify Equipment Authorization for White Space Devices.

As several parties have noted, requiring database administrators to examine the equipment authorization of TVBDs connecting to a database will increase burdens on the database with little offsetting benefit.⁷ Nevertheless, MSTV maintains that the Public Notice requires “database managers [to] verify that personal/portable TVBDs operating in Mode I... are certified.”⁸ We believe that MSTV is mistaken. In reality, the Public Notice requires only that the candidate “describe whether and how security methods will be used to verify that Mode I personal/portable devices that rely on another device for their geographic location information have received equipment authorization.”⁹ Spectrum Bridge’s database proposal fully addresses this request.

4. TLS is a Recognized Standard that Will Ensure Appropriate Security.

Most responses and comments support industry standard security systems such as the Transport Layer Security (“TLS”) protocol. As set forth in its proposal, Spectrum Bridge intends to incorporate TLS to implement database security features. TLS is a recognized standard, is well understood, and provides appropriate levels of security. Moreover, it is unlikely that a bad actor seeking to transmit illegally in the TV bands would dedicate substantial resources to attempt to defeat TLS encryption techniques when they could simply modify readily available RF transmitters and ignore the Commission’s white spaces database requirements entirely.

⁷ See, e.g., *TVWS Group Comments* at 4. See also *Comments of Telcordia Technologies Inc.* (filed Jan 4, 2010) at 23 (“Telcordia believes that significant value first needs to be determined before [Mode I device authentication] is required due to the significant increased message volume (traffic load) between the TV band database and the WS Device.”).

⁸ *MSTV Comments* at 13.

⁹ *Public Notice* at 3.

5. Spectrum Bridge Will Make the Database Capabilities Required By the Commission Equally Available to All White Space Devices.

Finally, MSTV maintains that Spectrum Bridge’s proposal is somehow “incomplete” because it does not contain sufficient assurances that it “will make its services available to all unlicensed TVBD users on a non-discriminatory basis.”¹⁰ Spectrum Bridge does not believe that there is ambiguity in its proposal on this issue; however, Spectrum Bridge confirms that all TVBDs will be treated equally with regard to the capability mandated or required by the Commission to support the white spaces rules.

Respectfully submitted,

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¹⁰ *MSTV Comments at 7.*