Federal Communications Commission
Washington, D.C. 20554

December 22, 2011

DA 11-2044

Mr. Rodney Dir, CEO
Spectrum Bridge, Inc.
1064 Greenwood Blvd. Suite 200
Lake Mary, FL 32746

Dear Mr. Dir,

Approval is hereby granted for Spectrum Bridge, Inc. to operate its "TV bands database system" to provide service to the public on or after January 26, 2012. This database system will provide support of unlicensed radio devices that transmit on unused channels in the spectrum bands used by broadcast television. The initial operation of this database system will be subject to the conditions specified herein.

The Commission's Part 15 rules (47 C.F.R. § 15.701 *et seq*.) require that unlicensed radio devices that operate in the broadcast television bands (TV bands devices) contact an authorized database system to obtain a list of channels that are available for their operation (*i.e.*,channels not occupied by authorized radio services) at their individual locations and operate only on those channels. Such devices are required to provide their geographic location, by means of a secure Internet connection, to a TV bands database system authorized by the Commission. The database will then return a list of the channels available for operation by the device for its reported location.

Spectrum Bridge, along with a number of other entities, was conditionally designated as a TV bands database administrator under the Part 15 rules in an *Order* issued by the Commission on January 26, 2011, 26 FCC Rcd 12827 (2011). Final approval for each designated database administrator's operation of a TV bands database system was subject to compliance with requirements that it: (1) supplement its previous filings with sufficient information to demonstrate how it will comply with the rule changes adopted in the *Second Memorandum Opinion and Order* (ET Docket No. 04-186, 25 FCC Rcd 18661 (2010)); (2) agree that it will not use its capacity as a database manager to engage in any discriminatory or anti-competitive practices or any practices that may compromise the privacy of users; (3) coordinate closely with the agency to ensure competency, consistency, and compliance with the rules; (4) participate in a series of mandatory workshops conducted by the Commission's Office of Engineering and Technology (OET) to address implementation issues and to ensure consistency and compliance with the rules; and (5) subject its database to real-world testing for a period of not less than 45 days. This public trial is intended to allow interested parties an opportunity to check that the database provides accurate results before being made available for actual use by TV bands devices.

Spectrum Bridge has provided the required submissions and has participated in the workshops in compliance with conditions 1 through 4. In addition, it conducted a public trial of its database system as required by condition 5 from September 19, 2011 to November 2, 2011. In this trial, Spectrum Bridge made its channel availability calculator, as well as its procedures for registering protected facilities, including low power auxiliary services (principally wireless microphones), MVPD and low power TV receive sites, and temporary broadcast auxiliary links that are not in the FCC databases available for testing by the public. Spectrum Bridge's final report on its 45-day public trial was placed in the record of the TV white spaces proceeding, ET Docket No. 04-186, and comments were requested in a Public Notice released November 10, 2011, DA 11-1872.

Comments on Spectrum Bridge's public trial and its final report on the trial were submitted by the Engineers for the Integrity of Broadcast Auxiliary Services Spectrum (EIBASS), Key Bridge Global, LLC (Key Bridge), the Land Mobile Communications Council (LMCC), the National Association of Broadcasters (NAB), Professional Wireless (PW), and the Wireless Internet Service Providers Association (WISPA). In addition, the NAB and Spectrum Bridge submitted reply comments. While those parties commenting on the channel availability calculator generally stated that the database accurately identified available channels, the commenters offered mixed positions on other aspects of the trial.

In considering these other issues, we first agree with the LMCC that it is important to ensure that the database takes account of any additional allocations for public safety licensees that have been authorized by waiver in some urban areas and welcome LMCC's offer to provide specific recommendations to assist in this effort.

We also agree with EIBASS that the database should protect: (1) the new or modified facilities of a broadcast station as soon as a station has filed a license application and the Commission's Consolidated Database System (CDBS) shows that application as accepted for filing; and (2) a television station with a timely filed renewal application. On these points, we note that our current CDBS database extraction logic for the TV bands database administrators, which is available at http://www.fcc.gov/encyclopedia/white-space-database-administration, provides such protection. We disagree with the EIBASS that the databases should protect the service of Mexican and Canadian stations in the territory of the United States because Section 15.712(g) of the Commission's rules provides that TV bands databases are not required to protect the portions of Canadian or Mexican television stations' contours that fall within the United States, 47 C.F.R. § 15.712(g).

We recognize the NAB's concerns with respect to problems encountered by its staff and others in using the database's registration system, particularly in being able to input information in some conditions or to report difficulties in some cases. Most of these issues were addressed and corrected as they were reported during the public trial period, and the rest are amenable to correction and will be corrected, as recognized by Spectrum Bridge. However, in addition to those issues, NAB also reports that it experienced "numerous" problems with attempting to register protected entities. Therefore, to ensure that the registration process is functioning properly, we agree with the NAB that it would be beneficial to provide an opportunity for additional public testing. We do not, however, believe that an additional formal test cycle with opportunity for submitting comments and replies to the Commission is needed; nor do we find it advisable to simply postpone resolution of existing concerns until after the database becomes "live," as Spectrum Bridge suggests. Rather, to address these issues, we are requiring that Spectrum Bridge implement the remaining planned updates to its database system and re-open the registration portion of its test site to the public (the channel calculation portion has remained open) during the period prior to activation of the database. This will allow broadcasters and others to further test the system to ensure that it is useable and performing properly. This will also ensure that the changes implemented during the prior trial will remain as needed and those promised in response to the trial will be implemented and tested prior to activation.

We are also requiring Spectrum Bridge to again activate its comment facilities and respond to entries made there, including by making any additional modifications to its database system that may be needed. Spectrum Bridge is to re-open its trial site facilities for a three-week testing period no later than December 29 2011 and take appropriate actions to resolve any problems that are reported prior to activation of the system. Spectrum Bridge may close those testing facilities a week before the permissible database activation date specified above to afford it time to make any final changes to its database system

in preparation for activation. (We note that NAB's concern that a full new testing cycle is needed if any rules are modified regarding protection zones or channel calculations is moot in this context, as no rules are affected and any such action would occur in a subsequent Order by the Commission. Any administrative consequences would be considered at that time.)

With respect to Key Bridge's arguments that the trial did not sufficiently or satisfactorily demonstrate compliance with the rules, the public trial requirement for TV bands databases, in providing an opportunity for the public to try out the channel calculator and registration systems before a database becomes active, was an invaluable and critical process in ensuring compliance. That testing demonstrated the essential performance characteristics of the database and the concerns that arose were relatively minor and readily addressable. We are fully confident that the additional testing we are requiring to address the NAB's concerns, will be sufficient to demonstrate that Spectrum Bridge's database will comply with the Commission's rules and that therefore the initiation of the extensive additional testing period that KeyBridge advocates is unnecessary.

Similarly, we disagree with PW and do not find it necessary to require that the database systems be subjected to an automated suite of unit tests. We believe that use of a "blind" test, whereby database managers cannot anticipate particular locations, provides the most reliable assessment of a database's overall performance capabilities. We are fully confident that testing by the OET staff using a confidential set of trial facilities and the public trial process are sufficient to validate that a database is able to accurately calculate lists of available channels for any location.

Based on our own testing, the results of the public trial, and the comments submitted in response to the trial and the comments, we find that Spectrum Bridge has demonstrated that its channel availability calculator is able to properly determine the unused channels at a location that may be used by the different types of unlicensed TV bands devices and that, subject to the additional opportunity for testing required above, its registration procedures properly record, store, and retrieve protected facilities that are not in the FCC databases.

While we find that Spectrum Bridge's TV bands database system is compliant and ready for operation as explained above, there are two elements of the TV white spaces plan that are not yet operational. First, as the Spectrum Bridge TV bands database system is currently the only database system that is ready for operation, we could not test its ability to synchronize registration records among multiple database systems. However, we are aware that the white space database administrator group has developed a specification for synchronization of their registration records, *see* White Space Database Administrator Group, *Database-to-Database Synchronization Interoperability Specification, Version 0.1* April 14, 2011, and that Spectrum Bridge plans to implement its synchronization facility using this specification. OET will verify that the Spectrum Bridge database system properly synchronizes its registration records with other databases when another database system is available for testing.

Second, the Commission's registration system for venues where large numbers of unlicensed wireless microphones are used is not yet operational. This system is still under development, and we anticipate that it will be operational in the first quarter of 2012. Until this system is operational and affected parties have an opportunity to register their venues, we are initially limiting the geographic area in which Spectrum Bridge may operate its database system to the Wilmington, NC market, specifically to the city of Wilmington and New Hanover County, NC, which is the location of the first planned deployment of a TV white spaces system. During the period until the FCC registration system is operational, parties seeking to obtain protection for venues where unlicensed wireless microphones are used may submit registration requests directly to OET at TVWSinfo@fcc.gov. If OET approves the registration, it will

direct Spectrum Bridge to create a registration record for the venue. The registrant will then need to access its registration record to enter scheduling and channel information for the venue. OET will issue a public notice to inform potential registrants of the procedure for applying to register such venues.

In addition, as the initial implementation of the Commission's plan for operation of TV bands devices proceeds, we anticipate that there may be additional changes, generally minor, in various aspects of the plan. There may also be elements of Spectrum Bridge's database system that will need to be fine-tuned as experience is gained with TV white spaces operations by the Commission, the database administrators, device manufacturers, and device users. For example, as the LMCC suggests, from time to time it may be necessary to refine the criteria for protection of Public Land Mobile Radio Service (PLMRS) and Commercial Mobile Radio Service (CMRS) and other incumbent operations. We will provide instructions to Spectrum Bridge and the other database administrators to incorporate and test refinements at such time as they may be developed. We do not generally expect that implementation of the database synchronization facility, the registration system for venues where large numbers of unlicensed wireless microphone are used, or other changes will necessitate testing through a public trial. We anticipate that operation of these features will be verified by the OET staff. Nonetheless, we are reserving the option to request that Spectrum Bridge undertake additional public trial testing if we determine that such testing is necessary to ensure that the database systems properly determine available channels and protect authorized services.

Accordingly, we are granting approval for Spectrum Bridge to operate its database system to provide service to certified unlicensed devices that operate in the broadcast television bands subject to the conditions above. The Commission will notify Spectrum Bridge when the conditions are removed. Authority for this action is provided in Section 0.241(h) and Sections 15.701-.715 of the Commission's rules, 47 C.F.R. § 0.241(h) and §§ 15.701-.715 and Sections 4, 5, 303, 304, 307, 336, and 554a of the Communications Act of 1934 as amended, 47 U.S.C. Secs. 154, 155, 302a, 303, 304, 307, 336, and 624a.

Sincerely,

Julius P. Knapp
Chief, Office of Engineering and Technology