



Federal Communications Commission  
Washington, D.C. 20554

June 28, 2013

Mr. Eric Chu  
Engineering Director  
Google, Inc.  
1600 Amphitheatre Parkway  
Mountain View, CA 94043

Dear Mr. Chu,

Approval is hereby granted for Google, Inc. to operate its "TV bands database system" to provide service to the public. This database system will provide support to unlicensed radio devices that transmit on unused channels in the spectrum bands used by broadcast television (TV white spaces, or TVWS).

The Commission's Part 15 rules (47 C.F.R. § 15.701 *et seq.*) require that unlicensed radio transmitting devices that operate in the broadcast television bands 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. These 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.

Google, 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.

Google 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 March 4, 2013 to April 17, 2013. In this trial, Google made its channel availability calculator, as well as its procedures for registering protected facilities, including low power auxiliary services (principally licensed and unlicensed wireless microphones), MVPD receive sites, and temporary broadcast auxiliary links that are not in the FCC databases available for testing by the public. Google'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 (Public Notice) released May 29, 2013, DA 13-1220.

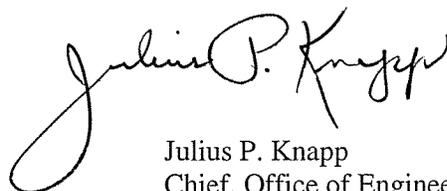
No comments were received concerning the Google database system's channel availability calculator or other aspects of the trial. Given the large number of parties that examined the Google database system during its public trial, we find the absence of comments on the data base content, channel availability calculator and registration features to be indicative that the system is satisfactory in those areas.

Based on our own examination and testing of the Google database system, the results of the public trial, including comments submitted to Google during the trial and Google's responses to those comments, and the fact that no comments expressing concerns were submitted in response to the Public Notice, we find that Google 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. We also find that its registration procedures properly record, store and retrieve protected facilities that are not in the FCC databases. In addition, we find that the Google database system properly synchronizes registration records with the Spectrum Bridge, Inc. TV bands database system and the Telcordia Technologies, Inc. TV bands database system using the White Space Database Administrator Group's *Database-to-Database Synchronization Interoperability Specification*, Version 1.01 September 12, 2011. We therefore find that Google's TV bands database system is compliant with the Commission's rules for TV bands database systems and ready for operation. We have not yet tested this database system with an actual TV bands device. When an application for a TV bands device that accesses Google's database system is processed, we will verify that the database's provisions for securing communications between a device and the database are functioning in accordance with the rules in conjunction with our testing of the device itself.

As the 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 Google's database system that will need to be adjusted as experience is gained with TV white spaces operations by the Commission, the database administrators, device manufacturers, and device users. We will provide instructions to Google and the other database administrators to incorporate and test refinements at such time as they may be developed. We do not generally expect that such refinements will necessitate additional 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 Google 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 Google to operate its database system to provide service to certified unlicensed devices that operate in the broadcast television bands as described above. 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,

A handwritten signature in black ink, appearing to read "Julius P. Knapp". The signature is fluid and cursive, with a large initial "J" and "K".

Julius P. Knapp  
Chief, Office of Engineering and Technology