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September 18, 2009

Ex Parte via Electronic Filing

Julius P. Knapp
Chief
Office of Engineering and Technology
Federal Communications Commission
445 12th Street, SW
Washington, D.C. 20554

Re: Authorized Ex Parte Contact – Unlicensed Operation in the TV Broadcast Bands (ET Docket Nos. 04-186, 02-380)

Dear Julie:

As a founding member of the White Spaces Database Group (“WSDB Group”), Google Inc. (“Google”) has been pleased at the considerable progress that has been achieved so far. We believe the work being done by member entities of the WSDB Group over the last eight months has brought us substantially closer to achieving our chief objective of fostering the near-term adoption and implementation of a geolocation database that will successfully support the safe and secure operation of white spaces devices (WSDs) within the parameters of the FCC’s November 2008 order.¹ In particular, attendance at weekly meetings of the full Group has continued growing to include representation from additional technology companies, as well as incumbent broadcasters and the wireless microphone industry. We also have several standing subcommittees which meet on a weekly basis to address topics such as security, data computation, data integrity, and architecture design.

Google thought it would be useful to provide its views at this juncture on a specific issue that may be addressed in the Public Notice (PN) being readied for publication by the Office of Engineering and Technology (OET). We note that MSTV, a member in good standing and important contributor to the WSDB Group, submitted an ex parte letter earlier this week describing a meeting with you and your staff to discuss treating the database administrator as operating under a permission-based standard.² The attached slides demonstrate why Google does not agree with this particular standard, and instead

¹ Federal Communications Commission, Unlicensed Operation in the TV Broadcast Bands, Second Report and Order and Memorandum Opinion and Order, ET Docket No. 04-186, ET Docket No. 02-380, 23 FCC Rcd. 16807 (2008).

² Letter from Bruce Franca, VP, Policy and Technology, MSTV, to Marlene H. Dortch, Secretary, FCC, ET Dockets Nos. 04-186, 02-380, dated September 16, 2009.

supports an approach we believe is more consistent with the terms of the November 2008 order. In brief, we see the proper role of the WSDB as limited to registering devices and providing responses to channel queries. Adding the separate role of permission-based authentication/enforcement engine raises a slew of troubling issues that we believe could significantly undermine the ultimate value of utilizing the white spaces on an unlicensed basis.

Despite any disagreement by member entities on this specific point, Google remains confident that the process being pursued by the WSDB Group can contribute, and become increasingly effective, in the post-PN environment. To that end, we urge the Commission to issue the PN as soon as possible, so that the Commission can quickly bring to fruition the implementation and operation of a viable geolocation database.

Please let us know if you have any questions.

Respectfully submitted,



Richard S. Whitt, Esq.
Washington Telecom and Media Counsel
Google Inc.

cc: Marlene Dortch, Secretary, FCC

Attachment: Update on White Spaces Geolocation Database Implementation Plans

Update on White Spaces Geolocation Database Implementation Plans

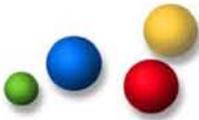
FCC Office of Engineering and Technology

**Richard S. Whitt
Washington Telecom and Media Counsel**



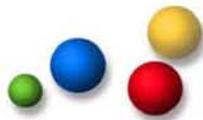
September 18, 2009

Outline



- Current progress on security
- Twin roles of the database
- Google's concerns with the broadcasters' "database as permission-based enforcer" proposal

Current progress on security



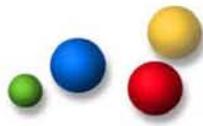
- The White Spaces Database Group (Group) has been meeting regularly to devise and propose certain structural components of the White Spaces Database (WSDB).
- Recently the Group has been focused on security-related issues, with good progress thus far.
- In particular, the Group seeks to ensure that the White Space Device (WSD) is receiving only valid data.
- Two key parameters have been established:
 - (1) WSD needs to know it is talking to a legitimate source of data
 - WSD must be able to authenticate the Service Provider.
 - PKI solutions are being fleshed out.
 - (2) All calculations must be done consistently to ensure confidence in the data being returned.
 - The WSDB would be the responsible party for all protected area information, and not individual Service Providers.

Database has two primary roles



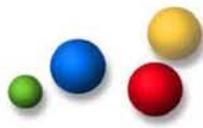
- The WSDB is primarily intended to be an alternative way of providing channel availability than could be done with sensing-only approaches
- The WSDB has two main functions: (1) device registration, and (2) channel query responses.
- The WSDB is not intended to have the additional function of enforcement.
 - The FCC has existing certification and enforcement processes for unlicensed devices that do not involve the use of the database.
 - The WSDB does not make any determination of enforcement actions.
- The Order indicates that the FCC is responsible for determining which devices are causing interference, and subsequently contacting WSD users that are causing interference. If the FCC fails to resolve the interference issue, the WSDB must have the functionality to indicate “no channels available” to the WSD. (para. 212)
- WSDB only provides information about channel availability; it does not make determinations about which devices are allowed to transmit.

The broadcasters' enforcement proposal



- The broadcasters have raised the concern that non-certified devices (those with no FCC provided ID) somehow will be able to contact the database and receive channel information.
- In order to deal with this situation, the broadcasters have proposed that:
 - only certified devices should be allowed to access database;
 - the database must validate that a device is certified *prior to* sending channel information;
 - the device ID must be authenticated in a manner similar to Cellular SIMs;
 - WSDB must check first that any device is on an approved “whitelist” before responding with channel information.

The proposal raises many troubling issues



- Our main objection: the WSDB should not act as an up-front enforcer.
- Expanding the expected role of the WSDB to include a permission-based authentication/enforcement engine raises many troubling issues.
 - Both transmitting and non-transmitting devices should be able to query the WSDB, and have knowledge of channel availability.
 - The proposal would introduce a “mother may I” device control component which must first grant permission to devices to transmit.
 - Devices would be required to have built-in strong authentication credentials such as SIMs or equivalents typically not mandated for unlicensed devices.
 - These built-in credentials would require an entire new ecosystem to issue, support, and manage the credentials.
 - Complexity and cost would be added to the database, ultimately slowing commercial development.
 - These additional cumbersome and costly security measures will not solve the threat of malicious devices. Devices would simply choose to not contact the database.
 - The FCC has existing procedures, both for certifying devices and for dealing with non-compliant devices. New procedures should not be re-invented as part of the database.
 - Adding additional requirements to the database beyond registration and channel information will potentially constrain innovation, deployment and may have unanticipated consequences.