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FCC's Hot Mess of a Database May Not Bode Well for Future Airwaves Sharing





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John Doe of 123 Jump Street has some explaining to do.

He's among dozens of questionable characters in a federal government database that's supposed to keep unlicensed Wi-Fi devices from knocking broadcast TV signals off the air. There are actually four John Does in the system, along with six entries for "Sue Q. Public" of "Anytown USA" and two from "John Q. Public" of the ever-popular location "None/None."

Even a quick look at the database suggests there's something not quite right. Is there really a company called "ACME" at 1600 Amphitheatre Parkway (an address more generally associated with [Google](https://www.google.com/maps/place/1600+Amphitheatre+Pkwy,+Mountain+View,+CA+94043/@37.4224764) <https://www.google.com/maps/place/1600+Amphitheatre+Pkwy,+Mountain+View,+CA+94043/@37.4224764>) And does Lin Sun really own 59 registered unlicensed Wi-Fi devices or have the actual owners simply copied that name from the [installer's guide](http://www.adaptrum.com/acrs2launch/content/acrs20_professional_installer_02062014.pdf) [http://www.adaptrum.com/acrs2launch/content/acrs20\\_professional\\_installer\\_02062014.pdf](http://www.adaptrum.com/acrs2launch/content/acrs20_professional_installer_02062014.pdf) of the devices they bought?

The reason these database entries could be troublesome is that they're part of an initiative by the government to allow use of unlicensed airwaves — so-called "white spaces," or the empty bands between TV channels — and such bogus entries could make that unworkable down the road.

As consumer demand for mobile data grows, federal officials and the wireless industry are increasingly looking at how to share more airwaves. The government currently allows use of these white spaces, but it also wants to keep some protections in place so new wireless devices don't interfere with existing services like TV broadcasts.

In order to do so, the FCC is monitoring a database system set up by third parties including Google that is supposed to show anyone operating an unlicensed white-spaces device who is using nearby channels.

The problem, however, is the database is self-reported, hence the bogus entries. The flaws so far are fairly minor — particularly since there are only about 600 or so actual devices in use right now — but if it isn't fixed, the system could become unworkable down the road when more people try to make use of the unlicensed airwaves.

Current mobile phones use airwaves set aside by wireless carriers, such as Verizon or AT&T. TV signals also broadcast over a specific bandwidth reserved for local station owners. Regular Wi-Fi or Bluetooth technologies use signals that are too weak to disrupt anything outside of a small radius around a home or coffee shop.

Devices using white spaces could, however, be more disruptive because they could be used to create "super Wi-Fi" networks over larger areas, such as a public park or a university campus. If the signals were strong enough they could knock out a local TV station's broadcast or cut into a wireless mic during a stage performance. The database is supposed to help keep that from happening.

But the entries suggest users aren't exactly following the rules. And that could be a big problem since it would be easy to game the system, as it's set up right now.

Since the FCC doesn't require fixed devices using those airwaves to include GPS chips, which automatically report their location, it's relying on people to self-report.

"The cornerstone of making all this possible is the database that tells us where the white-spaces users are versus licensees," said Robert McDowell, a former Republican FCC commissioner who is now a partner at Wiley Rein, a

D.C.-based law firm that has a large telecom practice. “Unfortunately, the FCC has not delivered an effective database, and this could delay the rollout of a whole new part of our economy.”

Google, Microsoft and other tech companies have been fighting for years to use those empty airwaves for unlicensed wireless devices. Ideally, those gadgets would use technology to sniff out which local airwaves are empty and avoid channels being used by TV stations or wireless microphone users, like churches, theaters or sports venues.

A handful of companies currently operate those databases (<http://www.fcc.gov/encyclopedia/white-space-database-administration>) and they’re supposed to be updated nearly instantaneously, but an examination of the two publicly available databases — maintained by Google and Telcordia Technologies — found differences. Google’s database had 561 entries for fixed-location white-spaces devices on Monday morning, while Telcordia’s had 628.

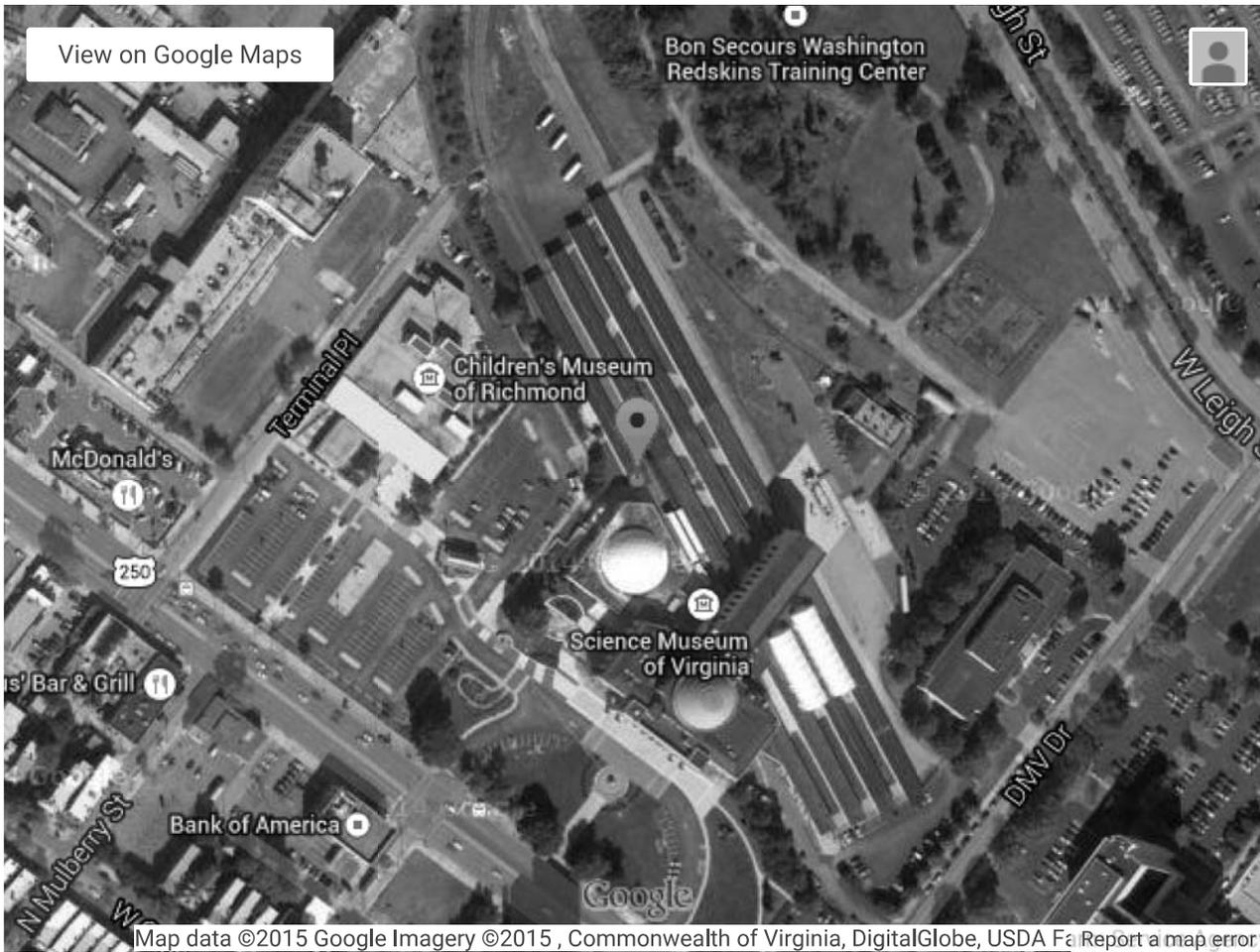
But it doesn’t look as though anyone is keeping tabs on the accuracy of what’s actually being added to the database.

One of the ACME entries, which lists Google’s address and a fictional phone number, is for a device that appears to be located in the middle of a Kansas prairie.



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John Doe of 123 Jump Street in Richmond, Va., appears to be located near the Science Museum of Virginia.



Some of the bogus entries are likely just test devices that manufacturers are using. Five listings in the system are dubbed simply "C," which appears to be short for Carlson Wireless, an Arcata, Calif.-based company that has been installing white-spaces networks. Even FCC engineers appear to be getting in the act. One of the 59 devices in the system registered to Lin Sun appears to be located at an FCC test facility in Maryland.



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“We are aware of some inconsistencies in the database and are working with the database administrators to correct these issues,” an FCC official said in an emailed statement. “A plan is in place to ensure that any erroneous data gets corrected as we move through next year’s auction.”

One reason why FCC engineers haven’t exactly been focusing on the system is that it’s not really being used by consumers yet, just companies or organizations that are installing large Wi-Fi networks.

That could change in a few years, however, when more devices are expected to be in use. Some companies are waiting while the FCC finalizes the rules when it auctions off more TV station airwaves next year to wireless carriers. Some of those airwaves are expected to be left open for unlicensed use.

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