



NEWS

Google to test innovative 3.5GHz wireless in Kansas City

Test to last up to 18 months, use shared spectrum FCC created last year



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Google won approval last week to begin testing innovative 3.5 GHz wireless capabilities by using antennas on light poles and other structures in eight areas of Kansas City, Mo.

It will be the first large-scale test of its kind in the nation, following a framework created by the Federal Communications Commission (FCC) a year ago for the new Citizens Broadband Radio Service, which uses 3.5GHz spectrum and allows for dynamic spectrum sharing.

The test could last up to 18 months and result in fast, short-range wireless connections to serve areas not reached by Google Fiber. FCC officials have called the 3.5GHz band the "innovation band," noting it could evolve into a new flavor of Wi-Fi or even an LTE Unlicensed band.

The commercial potential for the 3.5GHz band is large, both for Google and for its customers. "Yes, 3.5GHz is pretty innovative and could help Google create a city wide broadband network in KC," said Roger Entner, an analyst at Recon Analytics.

Google could use the service in many ways, although new smartphones and tablets would require 3.5GHz antennas for access to the band. However, a simple dongle inserted into a laptop's USB port could provide a 3.5GHz antenna, Entner noted.



Theoretically, wireless speeds of up to 300Mbps could be supported, compared to many 4G LTE average speeds of just 10Mbps to 20Mbps, Entner said. The 3.5GHz spectrum could also be used for wireless connections.



Google Fiber internet connections in homes in the Kansas City area in 2012 and now reaches businesses on both the Kansas and Missouri sides of the metro area. Google won't divulge how many subscribers it has.

"If Google is successful in the 3.5GHz test and goes on to provide commercial services, KC will become the most wirelessly connected gigabit region to benefit from new advanced wireless services," Assistant City Manager Rick Usher said in an interview.

The Kansas City, Mo. City Council voted last Thursday 11-2 to approve the use of city poles to support antennas in eight neighborhoods, including a downtown location near Google offices.

Google will receive from the city a discounted use rate of \$45 per light pole, per year for attaching antennas during the trial. Afterwards, Google will pay \$540 per pole per year, should it actually create a commercial service with the technology, according to city documents.

Google wouldn't comment Monday beyond the presentation it gave last week to city officials. The 3.5GHz testing is part of the Access organization under Alphabet, the name for the umbrella organization created by Google last year. The KC 3.5GHz testing is separate from Project Fi, which is an Android service introduced a year ago that combines Wi-Fi and wireless services for customers.

Even though the 3.5GHz test is separate from Project Fi, some analysts said the two could eventually be combined.

Google won approval from the FCC last year to do an experimental 3.5GHz wireless test. The company has also claimed its testing shows that both LTE and Wi-Fi network can work alongside radar systems used by the U.S. Navy in the 3.5GHz band. Google had performed the tests to prove the spectrum could be shared by various users; the FCC has required that technology be used to establish a priority for the defense networks.

Google defended the use of shared spectrum in a blog last year.

In its presentation to Kansas City officials, Google said it chose the city for the test because the area "understands technology and innovation" and has been an "excellent" partner.

Usher said a side benefit of commercialized 3.5GHz could be cheaper wireless service to lower-income residents who rely heavily on smartphone access to the Internet. "Shared spectrum in the 3.5GHz space has the potential to reduce costs and assist in our efforts to erase the digital divide in KC," Usher said.

"Wireless connectivity is a critical element of smart city success due to the massive amount of data generated and utilized in the networks," he said.

Last year, Sprint, which is located in Overland Park, Kans., announced it is financing a \$9 million free Wi-Fi zone along a new 2.2-mile streetcar route in downtown that opens May 6.

Smart city initiatives like those in Kansas City are being launched in many cities nationally. In a separate announcement Monday, AT&T and Miami-Dade County announced a partnership to bring technology innovations for smart lighting, public transportation and to reduce traffic and preserve natural resources.

AT&T previously announced a smart city partnership with Atlanta, among other communities.

Last week, Verizon said it would provide fiber optic connections to homes and businesses in Boston and conduct a traffic safety technology pilot on a busy city thoroughfare there.



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