

Project AirGig Aims to Deliver the Internet Over Power Lines

October 3, 2016



(TNS) — Preparing for a future when broadband becomes nearly as commonplace as electricity, AT&T envisions high-speed internet delivered over power lines in rural Wisconsin.

Next year, the company said recently, it will conduct field trials of technology that could enable anyone on the electric grid to also get internet service.

The new technology, called Project AirGig, would use inexpensive plastic antennas and other devices along power lines to send broadband signals to homes and businesses — without the need for additional costly fiber-optic cable buried in the ground.

AirGig would need the cooperation of utility companies that operate the power lines. AT&T says its goal is to deliver ultrafast internet speeds to the most rural areas in the nation and abroad, where currently there's hardly any service.

The technology could be a “game-changer” for Wisconsin and many other places, said Scott VanderSanden, president of AT&T Wisconsin.

“Much of this is going to depend on how the field trials play out ... but we are very optimistic this could work in the most remote areas of Wisconsin and also in some of the most urban and suburban areas of the state,” VanderSanden said.

AT&T says it has dozens of patents supporting the new technology, described as practical and transformational in a world where data-hungry trends like telemedicine and virtual reality will become increasingly important.

Initial test results in an outdoor laboratory have been encouraging, according to the company, which is why it's moving ahead with field trials.

"We think Project AirGig is unlike anything that's out there. We're experimenting with multiple ways to send a modulated radio signal around or near medium-voltage power lines," the company said.

AT&T hasn't disclosed where the field trials will take place, but some of the locations could be overseas.

"Project AirGig has tremendous potential to transform internet access globally," John Donovan, AT&T's chief strategy officer said in a statement.

It could be 2019 or 2020, at the earliest, before the technology reaches the marketplace, according to the company.

This would not be the first time that a telecom has paired wireless internet with power lines. The electric utility on Washington Island in Door County did it for five years before scrapping the system in 2010.

The technology worked, but there were reliability issues, said Robert Cornell, manager of the Washington Island Electric Co-op.

Something like a small crack in an electric-line insulator would interrupt the internet signal, even if it wasn't enough to trigger a power outage.

"It was good for our system, in that we found a lot of things that were probably outages waiting to happen several years down the road. But it was a lot of maintenance," Cornell said.

Washington Island's service had about 250 subscribers. The internet speeds were slow, Cornell said, with a maximum of about five megabits per second — compared with 25 mbps that is the current federal government standard for broadband, generally defined as high-speed internet.

Power lines also have been used to carry internet signals in other places, including Allentown, Pa., that experimented with the use of electrical outlets to deliver wireless service in homes.

Some people have said the signals sent over power lines caused interference with amateur "ham" radio frequencies, although that's not likely to happen with AirGig.

"After looking at this technology, it looks nothing like the type ... that caused us so many problems years ago. The sky is not falling," Ed Hare, laboratory manager for the National Association for Amateur Radio, said in a statement.

AT&T says it's addressing the challenges that hampered broadband over power lines a decade ago, such as slow speeds and high deployment costs.

The company says its wireless signals would hitch a ride along the outside of power lines, rather than through them, and the equipment would draw its power from the magnetic fields that surround the lines.

AirGig could deliver multigigabit speeds, far beyond what's available in the general marketplace now, according to the company.

The system would likely augment other means of getting the internet to homes and businesses, such as wireless antennas — about the size of a pizza box — mounted on a customer's home.

"The marketplace is moving to wireless technology," VanderSanden said.

There are big differences between AirGig and the earlier efforts to deliver broadband service over power lines, said Frank Livermore with Livermore Technologies, a Kaukauna-based consulting firm.

Still, questions remain about how the latest iteration will perform in extreme weather and under various circumstances, such as when a tree branch falls on a power line or the lines are swinging in the wind.

"I can see this working, but I also see potential issues that will only be discovered when the technology is deployed in a real live setting," Livermore said.

"It definitely could be a game-changer, but I am the kind of person who likes to wait and see," he added.

Many rural areas are clamoring for a better internet connection.

A recent national report ranked Wisconsin near the bottom among states in average speeds, although gains have been made through the deployment of fiber-optic cable and improved mobile wireless service.

Something like AirGig, if it's successfully deployed, could serve rural areas well, said Tom Still, director of the Wisconsin Technology Council.

It makes sense to use existing infrastructure, including power lines and cellular towers, to help deliver the internet, according to Still.

Technology companies have been criticized for announcing projects that generated publicity but did not come to fruition. Telecom customers have been frustrated over the lack of improvement in internet service in their area.

Pierce County officials say the lack of high-speed internet access in their area has been an economic development issue.

"We have gone for years trying to find out what AT&T's plans might be for broadband here, and we get no answers. ... And then we see what's happening in Minnesota, right across the border from us, and they are in a much better position," said Michael Kahlow, a Pierce County Board supervisor and chair of the county's Information Services Committee.

Without government assistance, broadband providers say, they can't afford to extend the service to sparsely populated areas because there aren't enough customers to justify the cost.

AT&T could benefit from AirGig if the technology lowers the cost of delivering high-speed internet to its DirecTV customers, many of whom are in rural areas.

The system would need a solid business plan and government approvals before it could be implemented.

“Project AirGig is still very much in the experimentation phase. That said, I’m excited about what AT&T Labs’ engineers have developed to date,” said Donovan with AT&T.

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