

# UW inventors create energy-efficient wireless network system

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UW-Madison researchers have created a new wireless network system that dramatically improves energy efficiency.

That's according to an overview from the Wisconsin Alumni Research Foundation, which is seeking commercial partners to help develop the system. WARF says the technology is well-suited to the "smart agriculture" industry, where it could connect various sensors monitoring soil quality, livestock and other factors.

Because distributed wireless sensors need to be able to communicate over long distances while consuming minimal power to extend battery life, technologies like these are limited by a "trade-off between range and power," the WARF tech summary shows.

One solution is to put transmitters in a low-power state between transmissions, but that approach limits the amount of data that can be sent, according to WARF.

To get around this challenge, the researchers have created a system that requires less "radio on-time" for any given message and reduces the amount of power needed per message.

"By dramatically improving energy efficiency, this technology will allow for longer deployment of sensors without battery replacement," authors wrote in the overview, adding the tech can also "scale extremely well" when combined with other techniques for extending network range.

The network's lead inventor is Bhuvana Krishnaswamy, an assistant professor in the university's Department of Electrical and Computer Engineering.

See more: <https://www.warf.org/technologies/summary/P190273US01/>