

New wireless communications systems to serve remote and rural areas

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And we're not just talking about wireless for folks living off the grid in Hāna. Across the United States, more than 19 million people, or 6 percent of the population, do not have access to reliable [broadband](#) communications coverage. Availability of such coverage is essential to education, jobs, health care and economic development, yet many people living in rural or otherwise inaccessible areas have only low-speed dial-up access or no data service at all.

Rough terrain and large undeveloped areas often present challenges to the implementation of cost-effective and reliable broadband wireless service.

HCAC is proposing a new solution based on the use of smart networking with high-performance directional antennas, propagation modeling applications, and spectrum-sensing resources.

"New network access protocols need to be developed, so that these advances may be achieved without affecting available communications standards and systems," said Magdy F. Iskander, Director of the Hawai'i Center for Advanced Communications. "Our solution represents a bold new concept for integrating these new capabilities to support customers in low-density regions."



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The program director for the NSF Electrical, Communications and Cyber Systems division who recommended the grant described the HCAC proposal as "an excellent proposal which will make a major impact on [wireless](#) communications for rural areas . . . [It] will have a transformative impact on rural communities."

The new NSF funding will support three years of research and development activity, during which time Iskander and the HCAC team will develop a prototype of their new broadband technology and test it in [rural areas](#) in Hawai'i.

Provided by University of Hawaii at Manoa

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