Latest PAWR Testbed to Focus on Rural Broadband

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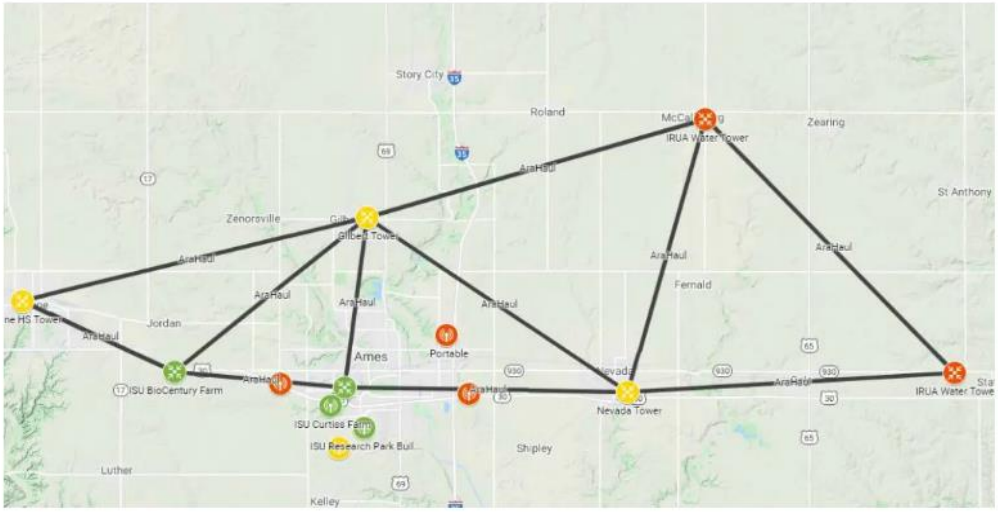
The National Science Foundation's Platforms for Advanced Wireless Research (PAWR) program has added a fourth testbed of large-scale wireless research platforms located throughout the United States. The new PAWR testbed will focus on rural broadband.

The latest testbed will include Iowa State University, the city of Ames, and other partners, as well as surrounding farms and rural communities in central Iowa and will focus on technologies for low-cost, high-speed rural broadband connectivity. Iowa State was named a finalist for the testbed project last year. The other testbeds are: POWDER-RENEW in Salt Lake City, Utah; COSMOS in the West Harlem neighborhood of New York City; and AERPAW in the Research Triangle area of North Carolina.

The NSF will provide $7 million in funding and the United States Department of Agriculture's (USDA's) National Institute of Food and Agriculture (NIFA) will provide another $1 million and there will be in-kind contributions from the PAWR industry consortium to match the federal investment.

PAWR Rural Broadband Project

The testbed, designated as ARA: Wireless Living Lab for Smart and Connected Rural Communities, will focus on a wide range of wireless technologies as well as on precision agriculture in both crop and livestock farms.



ARA Interactive Coverage Area Map – Source: ARA

"Select" partners in the ARA project include the Iowa Communications Network (ICN), Iowa Department of Transportation (IDOT), Iowa Statewide Interoperable Communications System (ISICS), Iowa Regional Utilities Association (IRUA), Iowa Communications Alliance, city of Ames, Story County, local school districts, Meskwaki Tribal Nation, Woodland Farms, U.S. Cellular, Collins Aerospace, and John Deere.

The ARA testbed will be a "heterogeneous network environment" using a wide range of wireless technologies. For backhaul connectivity, ARA will use a "multi-modal, high-capacity wireless mesh network" that will include low Earth orbit (LEO) satellite links, a free-space optical (FSOC) platform, and long-distance millimeter wave (mmWave) and microwave point-to-point communications. In the radio access network (RAN), ARA will use TV white spaces and CBRS spectrum, as well as spectrum in several other bands.

The ARA platform will use software defined radios (SDRs) and programmable off-the-shelf equipment to support research in areas such as bandwidth aggregation, channel bonding, and dynamic spectrum sharing– capabilities that are expected to lay the foundation for more affordable rural broadband service.

"Ericsson is excited to contribute our equipment and expertise to this groundbreaking rural innovation platform," said Paul Challoner, Ericsson North America vice president of network solutions, in a prepared statement about the PAWR rural broadband project. "ARA will help to redefine the research capabilities in rural America, in conjunction with PAWR and NSF, to develop technology to address the digital and mobility divides that currently exist in the U.S. The ARA platform will provide insights and technology advances needed to stimulate and support the economy of rural America."

Joan Engebretson contributed to this report.

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