Northeastern University Demonstrates Distributed MIMO Using Commercially Deployable Eridan Radios

Demonstration shows distributed MIMO moving from research concept toward real-world deployment

SUNNYVALE , CA, UNITED STATES, February 18, 2026 /EINPresswire.com/ -- Researchers at Northeastern University have successfully demonstrated distributed MIMO (dMIMO) in a laboratory environment using commercially available, FCC-certified radio units [from Eridan](#), marking an important step in advancing dMIMO from academic research toward real-world deployment.

Eridan is Powering Wireless AI with spectral and energy-efficient radio technology that enables carrier-grade performance at a fraction of the energy footprint.

In the demonstration, Northeastern researchers configured and coordinated two physically separate 2×2 radios from a single compute platform so they could operate together as a coherent 4×4 dMIMO system. They also configured a 2-layer 2x2 dMIMO system with coherent joint transmission with two physically separate antennas. The setup achieved a measurable increase in total throughput while validating the precise timing and synchronization requirements needed for distributed operation.

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> *Omid Tahernia, Eridan President & CEO*

Distributed MIMO is widely viewed as a promising alternative to traditional massive MIMO architectures, which rely on concentrating large numbers of transmitters within a single radio enclosure. By contrast, distributed MIMO coordinates multiple physically separate radios, allowing antennas to be placed farther apart and tailored to the deployment environment. This approach offers potential advantages in

thermal management, power efficiency, installation flexibility, and overall system scalability.

"Distributed MIMO has largely remained confined to research environments because of the strict timing and synchronization requirements," said Tommaso Melodia, Director of the Institute for Intelligent Networked Systems and William Lincoln Smith Professor with the Department of Electrical and Computer Engineering at Northeastern University. "This demonstration shows that those requirements can be met using commercially available, deployment-ready radios, which opens the door to much more practical experimentation and deployment."

The future of wireless won't be built on more power. It will be built on a cleaner signal

The Northeastern University team designed the testbed, configured the radios, and conducted all measurements. Their results indicate that dMIMO performance gains are achievable without relying on custom lab-grade hardware, an important consideration for operators evaluating scalable architectures and real-world rollouts.

"This represents one of the first demonstrations of distributed MIMO using commercially available, FCC-certified radios designed for real-world deployment," said Omid Tahernia, Eridan President and CEO. "Distributed MIMO depends on radios behaving predictably and coherently as a system. Seeing that demonstrated with deployable hardware is a meaningful milestone in understanding how these architectures can scale."

The results align with growing industry interest in AI-native and Open RAN systems, where centralized intelligence increasingly depends on predictable radio-layer behavior. Northeastern's work highlights how distributed radio systems, when properly synchronized, can serve as a scalable foundation for future wireless networks.

Representatives from Northeastern University and Eridan will participate in a dMIMO panel session on March 3, 2026, at Mobile World Congress Barcelona, where industry experts will discuss the operational realities and commercialization path for distributed MIMO architectures.

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About the Institute for Intelligent Networked Systems at Northeastern University
The Institute for Intelligent Networked Systems (INSI) at Northeastern University is a leading research and innovation hub focused on AI-native wireless systems, Open RAN, and next-generation 5G/6G networks. INSI works closely with industry and government partners to design, prototype, and validate advanced network technologies on large-scale experimental platforms, accelerating commercialization of secure, energy-efficient, and scalable wireless solutions.

About Eridan
Eridan builds 5G cellular radios that deliver Ultra-Clean Signal™ performance with significantly less power. Based in Sunnyvale, California, Eridan is Powering Wireless AI with spectral and energy-efficient radio technology that enables carrier-grade performance at a fraction of the energy footprint. Eridan.io

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