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Industries Welcome
Wi-Fi Data Access Solution

A multi-hop wireless mesh network researched and developed by Prof Gary Chan, Computer Science and Engineering, and his team has greatly improved Wi-Fi data access performance. The work has been successfully commercialized, leaping from his research lab to industrial deployment. It is able to overcome Wi-Fi coverage and throughput problems in the most challenging network environments such as container terminals, airpor ts, indoor complexes and cities.

The software the team developed, LAviNet, implements innovative channel selection and routing algorithms. These algorithms effectively eliminate dynamic and complex blind spots, avoid traffic congestion and reduce signal interference. After much testing and improvement through rigorous research and development cycles, the technology was successfully transferred to industry, where it has been well received by end users.

To date, Wi-Fi networks have suffered from limited coverage, high interference and costly set-up. By forming a cost-effective multi-hop network, LAviNet dramatically improves the networks overcoming these problems. Actual measurements have shown signal strength enhancement of 100 times or more, with a many-fold reduction in cost. LAviNet can be easily installed in most wireless routers to enable its features. These intelligent routers may be put anywhere without replacing the existing Wi-Fi access points.

Research and development on LAviNet star ted in 2007. According to Prof Chan, most commercial Wi-Fi solutions have been based on installing fixed access points. “In environments with obstacles and dynamic blind spots, such fixed access points no longer work well.” Comprising more than 20 researchers, postgraduates and undergraduates, his team has conducted research and development on the innovative solution. “We developed LAviNet with the research goal of maximizing user Wi-Fi experience. With continual feedback from deployment experiments, our research has successfully addressed wireless access challenges with direct impact on industry and users,” he said.

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