Hothouse
where business meets innovation

MeshScan: Seamless Wi-Fi Handoff

Product Offering

Researchers from Dublin Institute of Technology have developed a novel software tool that enables seamless network handoff of mobile internet as a user moves location, ensuring uninterrupted service.

The technology incorporates efficient and powerful client-side scanning capabilities that replaces the time-consuming scanning stage normally facilitated by the mobile network operator.

Competitive Advantages

- **Speed and Transparency of Hand-off:** The software eliminates the network discovery phase which accounts for approximately 99% of handoff delay. While existing WLANs experience handover delays off up to several seconds, this technology has reduced handover to less than 50 milliseconds, ensuring a seamless level of network service.

- **No Hardware Requirements:** Handoff is software based and is implemented on the client side making the technology easy to implement and cost effective.

- **Network Independent:** The workload is carried out on the client side rather than at the network access point. This means there is no requirement for the network operator to facilitate handoff.

- **Scalability:** The technology can be easily scaled to faciltate varying levels of network handoff.

Industrial Applications

This technology offers a value-adding augmentation for smartphone manufacturers and will be of interest to providers whose clients require seamless network services when roaming, such as VoIP over Wi-Fi.

Commercial Opportunity

DIT Hothouse is seeking a suitable commercial partner to take this innovative new technology to market.

The emergence and development of wireless internet-enabled mobile devices has created a growing demand for Quality of Service. This technology enables seamless internet usage while transitioning from one Wi-Fi zone to another. Importantly, the burden of ensuring an interrupted service is no longer the responsibility of the network service provider. This ground-breaking technology presents a significant commercial opportunity for manufacturers of mobile handsets, mobile network providers and application developers.

DIT Hothouse offers excellent commercial terms to licensees on technologies developed through DIT research.

T-13-056

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Stage of Development

A prototype has been developed, tested and executed in order to validate the proof of concept. Demonstration software is available and the technology is patent-pending.

Technology Description

This technology introduces an efficient and powerful client-side scanning algorithm that replaces the wireless network discovery step with a unicast scan that transmits Authentication Request frames to available mesh nodes within a Wi-Fi zone.

Handoff then occurs automatically via a software enabled client mobile device whereby the network connection is maintained from one Access Point (AP) node to another.

Project Team

The technology was developed through research undertaken by DIT's Communications Network Research Institute (CNRI).

The project team is led by:

- **Dr. Mark Davis (Principle Investigator)**

  Dr. Mark Davis is the Principal Investigator and project director at the Communications Network Research Institute (CNRI) at the DIT. The main theme of the research carried out at the CNRI is the delivery of QoS for real-time services such as VoIP telephony and video streaming. The CNRI has developed a number of tools for estimating user satisfaction with VoIP and streamed video applications, as well as a patented application for managing the bandwidth on WLANs

Intellectual Property

The Intellectual Property associated with this technology was created in Dublin Institute of Technology and is patent-pending.

Next Steps

If you would like to learn more about this technology or discuss commercial opportunities, please contact:

**Paul Maguire, Licensing Executive, DIT Hothouse on
01 402 7002 or email paul.maguire@dit.ie**

DIT Hothouse is the award winning Innovation and Technology Transfer Centre based in Dublin Institute of Technology. Hothouse leads the consortium responsible for commercialising research from DIT, IT Tallaght, IT Blanchardstown, IADT and National College of Ireland.

Hothouse draws in entrepreneurial and academic talent, ignites creativity and provides a dynamic environment to fast-track businesses and technologies to commercial success.

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