

Microsoft Authorizes Cutting-Edge Wi-Fi Technology Licensing Agreement for Companies and Entrepreneurs that Want to Tap the Billion Dollar Wi-Fi Marketplace

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7/26/07 — To spur commercial development of two mature Wi-Fi technologies invented by its Networking Research Group, Microsoft is now offering intellectual property (IP) licenses to entrepreneurial-spirited companies capable of deploying them as viable products or services for the billion-dollar-plus Wi-Fi marketplace.

"Intellectual property generated by Microsoft can turn into opportunities for others," says Louis Carbonneau, General Manager for the IP Licensing Group at Microsoft. "Our research labs generate more IP than our product groups can absorb."

"Right now, our goal is to see our new Wi-Fi technologies around RTLS and hot spots deployed as great new products or services for businesses or consumers. Companies that license our IP have fabulous new opportunities to gain access to best of breed IP and the cachet of deploying technologies coming out of our renowned Microsoft Research Labs. We can help companies enter new markets or expand current lines of business," adds Carbonneau.

The following two Wi-Fi technologies have enormous commercial potential as they both sit squarely in two very fast-growth markets.

Microsoft's RADAR

First, RADAR—an indoor real-time location system (RTLS) that's optimized for Wi-Fi but can be used in any wireless network—can be deployed to guide people through large buildings, to keep track of unauthorized individuals within a high-security environment, and to locate equipment within large premises.

Cost effectiveness is one of this technology's chief selling points. The WLAN infrastructure that already exists inside many businesses can be used to support RADAR. In general, since RADAR is completely software-based and uses existing wireless access points (APs), there are no new hardware installation requirements.

While a user with a Wi-Fi enabled device wanders through a building that supports a wireless RF LAN, the signal strengths that the device measures from the building's wireless APs vary depending on its location. RADAR measures signal strength at the receiver and transmitter.

RADAR's precision in RF profiling serves to map out environmental objects and different signal strengths throughout the indoor area. This capability rests on two breakthroughs by Microsoft researchers: the first involves the use of advanced algorithms that can locate a wireless device to within one-and-a-half meter; and the second involves the newly created system called LOCADIO, which uses probabilistic modeling to overcome noise distortion when measuring Wi-Fi signals so that the final location answer is more accurate.

LOCADIO also takes account of a motion model to make RADAR cognizant of walking speeds, and it creates a model of feasible paths within a floor plan, since people don't walk through walls. These two models work together to calculate the data so that it makes sense. For example, it may look like the user followed a feasible path, but the speed that the user is traveling at may look unreasonable. Under this scenario, RADAR will make appropriate adjustments to improve the final calculations to determine the precise location.

Of course, RADAR does an excellent job of locating fixed assets as well. Microsoft's licensing package for RADAR includes software code, documentation, know how and close to 40 U.S. and International patents, both issued and pending.

Microsoft's CHOICE

Second, CHOICE—a Wi-Fi network system that is also available for Microsoft IP licensing—can be leveraged by the licensee to deploy a new wireless "hot spot" service or to augment an existing Wi-Fi deployment.

Because this network access system allows different service providers to offer separate and concurrent services to the same user, CHOICE's flexibility differentiates it from its competitors.

The CHOICE system consists of five key technologies:

- The Global Authenticator maintains a databank of all the legitimate users who have subscribed to the CHOICE network access service. This databank is then used to securely establish the identity of users.
- The Network Admission Server (NAS) only allows authenticated users access to the public network through the traffic control gateway. When a user first enters a network, the Dynamic Host Configuring Protocol (DHCP) server running on NAS provides an IP address to a user client installed on the user's device.
- The Traffic Control Gateway (TCG) handles policy verification and enforcement on a per-packet basis for users authorized by NAS. The TCG checks whether each packet is encrypted with the correct key and tagged with the corresponding token.
- The Client Module is a software component installed on user devices. It tags all outgoing packets with the key/token pair obtained from NAS, and can be downloaded from the host organization's Web server.

- The Policy Manager ensures the availability of various services to the user. It allows the host organization to set policies that may be pre-negotiated with other corporations.

Microsoft's licensing package for CHOICE includes software code, documentation, know how and around 10 U.S. patents, most of which issued and some of which are considered to be fundamental in that space.