New System Reports Patient Falls

Two French companies have teamed up to create a wireless sensor able to detect when a patient falls, and to report that information to a caretaker.

By Beth Bacheldor

June 28, 2006—Two French companies, Coronis Systems and Data Health System S.A. (DHS), have combined their technologies to create a wireless system that can alert health-care workers when a patient falls.

The monitoring system, Ynolis, is being launched after several months of testing at the Montpellier University Hospital in France, and at the City of Paris Center for Social Action. The system combines DHS' detection bracelets with Coronis' wireless network, a proprietary mesh technology called Wavenis, which operates in the 870 MHz (Europe) and 915 MHz (North America) bands at data rates of less than 20 Kbps.

How Ynolis Works

Each patient gets a bracelet with a unique ID. The ID is associated with the patient's name in a database. Three-dimensional sensors embedded in the bracelets monitor and calculate changes among the sensor's dimensions. If there's a major change (which could be caused by a patient falling), the bracelet's wireless chip transmits a packet of data indicating that change and the unique ID associated with the patient to a reader or access point equipped with algorithms. The reader can then further process the data.

"If the algorithm detects a fall because the change was major, the reader sends that information, along with the ID of the bracelet, to the central unit," says Christophe Dugas, director of strategic marketing at Coronis. The central unit—a computer that hosts the database of patient names—correlates the ID of the bracelet with a patient's name, then sends an alert to a health-care worker's pager, indicating the patient may be in trouble.

Coronis' Wavenis technology is designed to allow long-range data transmissions—up to 650 feet—among battery-powered devices. Unlike comparable Wi-Fi networks, however, the technology uses very little battery power, Dugas explains. That means the batteries in the Ynolis detection bracelets can last for several months. "This is not Wi-Fi. If you applied Wi-Fi in one of these bracelets, the battery would last for two hours, no more," he says.

Coronis is now introducing its wireless technology to RFID vendors that might be interested in incorporating Coronis' technology into their own systems. In fact, the company is working with both EPCglobal and GS1—the successor to the Association for European Article Numbering (EAN), the counterpart to the U.S. UPC code—to define compatible application-programming interfaces that allow their technology to work in standards-based RFID systems.

Dugas says Coronis' wireless technology could be used to transmit data from active RFID tags to Wavenis readers. Because Wavenis allows for fewer readers in a larger area, a company could save money. "The active tags won't need dedicated portals at each point where data needs to be collected. You could just deploy a Wavenis reader on a light pole, for example, to collect data from lots of tags in a large area."

Coronis is currently working with several companies in Europe, the United States and Asia that are considering using Wavenis with their RFID initiatives, Dugas says. Based in Montpellier, France, Coronis was founded six years ago by four executives who previously worked at Itron, a leading automated meter-reading technology company. Coronis has deployed more than 700,000 of its wireless devices to date, and Dugas says the company expects that number to grow to 1 million by year's end.