

# Univ. of Pittsburgh Kicks Off RFID Center

A new RFID facility will provide a clearinghouse for the university's varied research and technology development around RFID.

By Mary Catherine O'Connor

Sept. 29, 2005—RFID is nothing new at the [University of Pittsburgh](#). The institution's [School of Engineering](#) has been involved with RFID research and product development for academic, government and commercial applications for more than five years. These efforts were initiated and continue to be led by Marlin Mickle, a professor who is now assuming the role of director of the University of Pittsburgh Radio Frequency Identification Center of Excellence.

Mickle says the school established the center in an effort to centralize and formalize its RFID work. "We've got so many things going on that are related to RFID, and that work is being done in different departments. In order to help us keep the books straight—because we're buying equipment and paying people's salaries—we needed a single focal point," he says, which the center will provide.

Mickle acknowledges that part of the school's interest in establishing the center is linked to the fact that many other organizations, academic and otherwise, have also established RFID centers. "We figured we'd better do the same thing," he says.

Researchers at the university have developed a tag readability testing system that assesses how well various tags can be read at different placements on cardboard cases full of various types of product. Consumer packaged goods (CPG) companies or others under an RFID tagging mandate might use these testing services to determine the best type of UHF tag for their products, and where to apply the tags.

According to Mickle, the center will initially use RFID testing equipment, hardware and software purchased or developed through its research efforts, rather than accept donations of such items from RFID vendors. End users of RFID often bring much of their own equipment to the center, he adds, such as readers (interrogators) and tags.

"For example," he says, "we're doing work for [GlaxoSmithKline](#) right now, and they bring in their readers and tags, and we do the evaluations for them." The university is helping the pharmaceutical giant develop the best means for tagging product displays it sends to retailers.

While testing might make up much of its day-to-day activity, the center will also administer the licensing and testing of RFID-related technology developed by the university. For example, it has created intellectual property for a new tag manufacturing process that Mickle says reduces the amount of time required to attach chips to straps and antennas to form RFID tags. "We use a system that does not use a conventional strap, and the IP is in how to make the [tag manufacturing] line run faster by reducing the three- to eight-second delay at each step in the manufacturing process, so that an epoxy or polymer can cure." The university, he says, is in discussions with a company interested in licensing that IP.

The center will also serve as home to a much different area of research—namely, using radio frequency to develop medical applications. Mickle says the university is about to license technology involving the use of RF to excite nerves in the brain. He says there are three targeted treatment areas for this technology: reducing the tremors suffered by victims of Parkinson's disease, stimulating blinking in people with Bell's palsy and treating clinical depression.

The technology being developed for these medical applications evolved out of Mickle's research into Product Emitting Numbering Identification (PENI) tags that use two antennas and harvest RF from electromagnetic energy in the air (see [A New Approach to RFID](#)).

The 3,000-square-foot center, located in the School of Engineering's [Swanson Institute for Technical Excellence](#), is now open. The School of Engineering funded its construction, but the work to be done there, through government and commercial contracts, will generate enough revenue to meet the center's ongoing operational expenses, says Mickle. The center is being staffed by an administrator, a business manager and two graduate students, as well as Mickle and possibly a full-time RF technician.

Other universities that have launched RFID centers include [The University of Wisconsin](#) (see [University of Wisconsin Debuts RFID Lab](#)), the [University of Arkansas](#) (see [University Opens RFID Research Center](#)) and the [University of Florida's Institute of Food and Agricultural Sciences \(IFAS\)](#) (see [University Takes a Fresh Approach to RFID](#)).

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