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## UA develops tracking device anticipated nationwide

By Robin Morales  
Special Northern Light

Radio Frequency Identification has transformed the University of Alaska Anchorage into a major research and development center within the last two years. Professors and students are working to solve security and inventory control issues within the global supply chain.

Radio frequency has been around since 1948. One of its applications is to track products as they move throughout the supply chain. Initially transmitters were bulky, about the size of a breadbox, and costly to produce. It was from this older technology that RFID was created. With modern advances it is now mass-produced, significantly lower in cost and the size of a tiny chip.

“Like any new technology it’s exciting, there’s a lot of hype out there,” said Hedgepeth.

RFID got its start at UAA when Senator Ted Stevens pushed an initiative to promote technology development in Alaska. Now the University of Alaska Fairbanks and UAA have both developed research teams and laboratories to study and develop this technology.

Excitement for the new logistics technology has been shared nationwide and was further stimulated when mega-retailing giant, Wal-Mart, demanded that their top 100 suppliers use RFID sensors on cases and pallets of all products starting in January 2005, according to the Journal of Commerce.

Following suit, the Department of Defense has issued an order that requires all supply items to use RFID technology within the current year. All 42,000 suppliers to the DOD will have to identify their products and where they go in the inventory system, said Dr. Oliver Hedgepeth, assistant professor and chair of the logistics department.

“With Wal-Mart and the DOD pushing it, obviously the UAA logistics department is going to be interested because it’s all logistics,” said Hedgepeth.

A group of students from the computer science and logistics departments are working on RFID research. Eight students placed in the community work as research assistants or sub contractors to work with businesses on sensor technology.

UAA research teams are currently working with two types of RFID tags. The passive tag would ultimately replace the bar code found on products. They don’t require batteries, can last 5-6 years, are reusable and can be attached to a pallet or individual item. Bar codes have to be manually scanned through the inventory system. But with the RFID tag in place, the item would automatically send 200 pieces of information per second to the computer system without anyone having to look at it, said Hedgepeth.

The benefit of this technology includes providing better inventory management, lower labor costs and reduction of theft. The cost for RFID tags is still higher than bar codes, but the tags will become cheaper as demand increases.

The larger active tags are battery operated and have the ability to record time and temperature.

“There is a growing excitement about the active tags in Alaska because of the seafood industry,” said Hedgepeth.

As an example, one of these tags could be thrown into a box of frozen fish getting shipped to New York. When it arrives the tag will tell the computer the temperature throughout the entire journey. If there’s a spike in the results, if it warmed to over 32 degrees, it proves that the product was unfrozen then refrozen and it is a bad order, said Hedgepeth.

The UAA Board of Regents launched the Business Enterprise Institute in September to assist the College of Business with its goals to promote economic development. Rooms at the University Center have since been opened for both startup companies and research.

UAA senior and research assistant Steven Brown formed Nano Logistics, LLC as a business spinoff from his studies of logistics. Brown, president and CEO, operates out of the University Center with his staff.



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The university logistics program is testing a tag which tracks products during shipping and automatically records information like temperature and location. The tag will eventually replace barcodes.

The school of business will offer its first RFID class “auto ID” in fall 2004. Students will work with RFID technology in different factory and warehouse settings, exploring economic models and theories, said Hedgepeth.

“Few understand logistics better than Alaskans. Positioned at the transportation crossroad of the world, Alaska is strategically located relative to the world’s great markets. Concentrated study of logistics and global supply chain management is widely recognized as a requisite for competitive advantage,” according to the UAA Logistics Web site.

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