

RFIDs: Smart Little Gizmos Get Even Smarter

Expertanswer (Expert svar in Swedish). "RFIDs: Smart Little Gizmos Get Even Smarter." ScienceDaily 9 July 2010. 15 July 2010 <<http://www.sciencedaily.com/releases/2010/07/100707065214.htm>>.

Researcher Björn Nilsson. (Credit: Photo by Ida Löfstål)

ScienceDaily (July 9, 2010) — With the help of smart RFID technology, things, animals, and people can be identified remotely, and the information can be sent and stored in databases. Now the method will be even smarter thanks to researcher Björn Nilsson at Halmstad University in Sweden, who is presenting solutions that make this technology more effective and more energy efficient. In fact, as much as 60 percent more efficient.

RFID stands for "Radio Frequency Identification" and is about identifying something remotely with the help of wireless technology. A product is provided with a tag -- or a label -- which in turn has a unique identity number. When a tag passes a reader, the tag is read, and the number is registered.

RFID tags are found on masses of items in a great number of different areas where someone wants to trace, identify, and store information. Business like logistics, transportation, and animal husbandry can be made considerably more efficient with the aid of more modern tags.

Thanks to Björn Nilsson's research, there is now a solution that makes the technology even more effective and, what's more, more energy efficient. He has developed a protocol, that is, rules for communication between readers and tags, for so-called active RFID tags that entail that the use of energy is reduced and batteries last longer. This means that it is now possible to produce simpler and thereby cheaper tags.

Today's active tags have been relatively limited since they have been energy-consuming and expensive to produce. There is a great demand for more energy-efficient tags with longer lives. But there's another snag. If multiple tags pass a reader at the same time, it might be that all tags are not read then and there.

"This is what it's all about. They can't 'interrupt' each other. The talk needs to be organized. You also want the tags to use as little energy as possible. This is what my research is about: how readers and multiple tags talk to each other at the same time, effectively and without causing confusion," explains Björn Nilsson.

The next step is to develop an active tag with a single circuit. Björn Nilsson is already working on this. Together with his colleague Emil Nilsson at Halmstad University, he is running a project where Björn's job is to see to it that readers and tags communicate with each other, while Emil is developing the electronics to make it all more efficient.

Early this summer Björn Nilsson, together with his thesis director at Chalmers University of Technology, Lars Bengtsson, and his colleague Emil Nilsson at Halmstad University, presented this research at one of the world's largest RFID conferences in China. Their paper was selected as one of the eight best at the conference in China.

"We're very competitive in this field at Halmstad University," says Björn Nilsson.

The dissertation is titled *Energy Efficient Protocols for Active RFID* and was submitted to Chalmers in June. The research work was carried out at Halmstad University and the company Free2Move.

Story Source:

The above story is reprinted (with editorial adaptations by ScienceDaily staff) from materials provided by [Expertanswer \(Expertsvar in Swedish\)](#), via [AlphaGalileo](#).
