The Seattle Times
seattletimes.com

Wednesday, March 1, 2006 - 12:00 AM

Man grips future with microchip implants in hands

By Kristi Heim
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Bellingham entrepreneur Amal Graafstra has given a new meaning to hands-on technology.

In each hand, between his thumb and index finger, is a microchip implant, which he can use to open doors to his apartment and car and sign on to his computer.

The one in his left hand was designed for tracking wildlife, among other things.

He ordered both chips for less than $5 each on the Internet.

"I saw pets getting these things for years, and then I heard about people getting the chip implant," he said. "I wanted to use that technology so I don't have to carry any keys."

Graafstra, 29, is one of a small but growing number of people experimenting with RFID chips in their bodies. He plans to talk about his project at 7 p.m. today at an event called Dorkbot at Seattle's Center on Contemporary Art. At the event, a local cosmetic doctor will implant the chip in a Canadian robotics enthusiast.

COURTESY AMAL GRAAFSTRA/
Amal Graafstra simulates how he opens a door using an RFID chip implanted in his hand. He has a microchip in each hand, between the thumb and index finger.

Information

More information on

Dorkbot: http://dorkbot.org/

dorkbotsea/

RFID, or radio frequency identification, transmits information wirelessly from a tiny chip or tag to a reader device. Its applications are broad, from tracking merchandise in warehouses and controlling access to buildings, to identifying pets if they're lost.

In 2004, the U.S. Food and Drug Administration approved the first human implantable chip, made by VeriChip of Delray Beach, Fla. Since then, about 85 people in the United States have had the VeriChip implanted, primarily to give doctors speedy access to their medical records, said company spokesman John Procter.

Graafstra has engineered the chips in his hands to serve the same purpose as the code that opens his apartment door or the key fob that unlocks his silver 2004 Volkswagen Golf. He keeps no data on the chips, just a 10-character code.

He waves his hand within a few inches of a sensor on the windshield, and that performs the same function as pressing a button on his remote control, unlocking the car door.

The chip was implanted by Dr. Virginia Stevens of Woodinville, who will do the same procedure tonight.

"It's not that huge a deal for the body," Graafstra said. "It was really kind of a fun experiment.

"I got the implant in my hand and I was writing the software with the bandage on," he said. "Within a couple of hours, I had the front-door access working."

Stevens, a cosmetic doctor at Hypatia Clinic in Woodinville, has performed about eight RFID chip implants since Graafstra's first in March 2005.

"My first reaction was here we go toward the end of the world," she said. "All your whole life history on a little chip."

Medically, she called the implant process "extremely simple."

She numbed the area, made a small incision with a scalpel, inserted the 13-millimeter chip and sealed the opening with skin glue.

Last July, Graafstra had his second chip inserted "in two seconds" with a special needle by his family doctor. He hasn't started using that chip yet, but is trying to figure out how to implement features for it.

The technology raises eyebrows — and the ire of privacy advocates — for its social implications.

"We think it's a very bad idea," said Liz McIntyre, co-author of the book "Spychips: How Major Corporations and Government Plan to Track Your Every Move with RFID."

Making chip implants seem like a cool experiment sends the wrong message to young people, she said.

"They're equating this with just another piercing," she said. "What they're doing is actually breaking down the mental barriers to the unique numbering of humans."

Because information on the tiny chips can be read surreptitiously from a distance, privacy watchdogs worry that the prevalence of RFID could allow secret monitoring and tracking by government or companies.

Graafstra acknowledges that any technology has potential for abuse. But many of the fears stem from misunderstanding, he contends.

"Basically people are learning about the technology, which could never be a bad thing," he said. "If it ever became oppressive, it's the people learning about it now who would be equipped to fight it."

He hopes his hands-on experiment can help dispel some myths. "Take charge of the technology," he says, "don't run from it."

One advantage to the do-it-yourself approach is that his system works only with his property, unlike corporate systems with many users linked to one database. With those systems, hackers could stage random attacks on anyone in the database.

Reading his chip would be like "finding a house key on the ground," Graafstra said. "It only works on my house, and you don't know where I live.

"The information can't be used in a way that would compromise my money or my medical data or anything

like that," he said.

Graafstra has written a book, "RFID Toys," with step-by-step instructions for rigging doors and computers to respond to RFID tags. He's also converted his girlfriend. She has a chip implanted in her hand that lets her into his apartment and car.

Another convert is Phillip Beynon, a robotics enthusiast and college student from British Columbia who plans to have the chip implanted in his right hand tonight. He has projects planned, including using RFID to lock his computer, drawers and suitcase.

One challenge may be finding a willing doctor.

"A lot of doctors would have a moral problem with it," Stevens said. "If the person understands exactly what its potential capabilities are, and the way they use it is clearly defined, they are adults and can make their own decisions."

As for herself, Stevens said, "I would just scrounge around for my keys."

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