## **Human Implantable RFID Tags**

-By Louis Chen

RFID: Radio-Frequency Identification

- A RFID acts like a key which can ultimately unlock a series of information
- There are only two parts to the equation, the RFID reader and the tag
- The tag and the reader checks for a matching code which can then be used to unlock anything- locks, inventory, medical records, etc.

There are always challenges when facing new technology, some of which include:

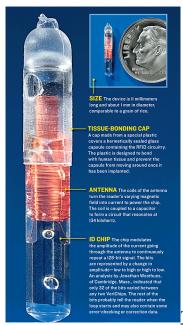
- -Having a complex and encrypted tool
- -Range of RFID reader for fear or hacking
- -Medical Restrictions like MRI
- -Ethical Restrictions

There are 5 simple steps for the basic RFID 1) A RFID reader emits radio waves within range and power up the implanted tag. The reader then sends an encryption password

- 2) The tag checks to see if the password matches, then unlocks it's memory
- 3) The tag transmits a code store in the memory back to the reader
- 4) The reader compares codes. Once matched, the lock opens
- 5) The reader generates a new key and synchronizes that key with the tag

Lead Human Implantable Manufacturers

- Philips
- VeriChip
- Samsung
- Quantique
- MangiQ
- And many more



The Tag Itself

- Tags can cost as little as \$2
- Readers cost \$30-\$600 and take only 30 seconds to inject
- It is FDA approved to be used in humans
- Not only cover humans
- THERE IS NO GLOBAL PUBLIC BODY THAT GOVERNS THE USE OF RFID
- Fear of becoming a Spy Chip
- Tag can be read at a distance without being known
- There is an outcry about ethics

## **Sources:**

Hands On How Radio-Frequency Identification and I got personal By Amal Graafstra,

This paper appears in : Spectrum, IEEE

Publication Date: 3 April 2007

Pages 18-23, Volume: 44, Number: 3

- http://amal.net
- http://en.wikipedia.org/wiki/Main Page
- http://ieee.spectrum.org