

IMPLANTATION OF BIOCHIP IN EMPLOYEE-ERA OF NEW TECHNOLOGY

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Abstract: Biochip is a most exciting future technology in an outcome of the fields of Computer science, Electronics & Biology. . It is a bio-security device which is used to accurately track location or information regarding what a person is doing, and who is to accurately track information regarding what he is doing, and who is actually doing it. Today a single chip replaced everything in your daily needs like as cash, credit card, ATM card, ID card, insurance and also your life.

32M employees are used this technology, the chips can be used to login PCs, the RFID chip will be implanted into their hand to "make purchases in their break room micro market, open doors, login to computers, use the copy machine," and other work-related purposes, logging into our office computers, unlocking phones, sharing business cards, storing medical/health information, and used as payment at other RFID terminals," said 32M CEO Todd Westby. "Eventually, this technology will become standardized allowing you to use this as your passport, public transit, all purchasing opportunities."

Keyword: Biochip, Scanner, Passport, RFID, LCD .etc.

I. INTRODUCTION

Biochip has a variety technique for secured E-money transactions on the net. The biochip has a power to find a solution of problem regarding lost children, downed soldiers, and patients. The current, in use, biochip implant system is actually a simple device. Today's, biochip implant is basically a small (micro) computer chip, inserted under the skin, for identification purposes. The biochip system is radio frequency identification (RFID) system, using low-frequency radio signals to communicate between the biochip and reader.

A simple ID chip is already walking around in tens of thousands of individuals, but all of them are pets. Companies such as AVID (Norco, Calif.), Electronic ID, Inc. (Cleburne, TX.), and Electronic Identification Devices, Ltd. (Santa Barbara, Calif.) sell both the chips and the detectors. The chips are of the size of an uncooked grain of rice, small enough to be injected under the skin using a hypodermic syringe needle. They respond to a signal from the detector, held just a few feet away, by transmitting out an identification number. This number is then compared to database listings of registered pets or any human being.

II. RELATED WORK

- Biochips are any microprocessor chips that can be used in Biology.
- The biochip technology was originally developed in 1983 for monitoring fisheries, it's use now includes, over 300 zoos, over 80 government agencies in at least 20 countries, pets (everything from lizards to dogs), electronic "branding" of horses, monitoring lab animals, fisheries, endangered wildlife, automobiles, garment tracking, hazardous waste, and humans. Biochips are "silently" inching into humans. For instance, at least 6 million medical devices, such as artificial body parts (prosthetic devices), breast implants, chin implants, etc., are implanted in people each year. And most of these medical devices are carrying a "surprise" guest — a biochip.
- In 1993, the Food and Drug Administration passed the Safe Medical Devices Registration Act of 1993, requiring all artificial body implants to have "implanted" identification — the biochip. So, the yearly, 6 million recipients of prosthetic devices and breast implants are "biochipped". To date, over 7 million animals have been "chipped".
- Epicenter, which is home to more than 100 companies and roughly 2,000 workers, began implanting workers in January 2015.
- Ben Libberton, a microbiologist at Stockholm's Karolinska Institute, says hackers could conceivably gain huge swaths of information from embedded microchips. The ethical dilemmas will become bigger the more sophisticated the microchips become.
- **"Body hacker"** Jowan Osterlund from Biohax Sweden who performs the "operations of biochip."

- The major biochip companies are A.V.I.D. (American Veterinary Identification Devices), Trovan Identification Systems, and Destron-Fearing Corporation. AVID (American Veterinary Identification Devices), claims their chips, using an nnn-xxx-xxx format, has the capability of over 70 trillion unique numbers. The unique ID number is "etched" or encoded via a laser onto the surface of the microchip before assembly. Once the number is encoded it is impossible to alter
- Daniel Man, a plastic surgeon in private practice in Florida, holds the patent on a more powerful device: a chip that would enable lost humans to be tracked by satellite.

III. BIOCHIP IMPLANT

Biochips contain two components, Transponder and Reader. The transponder is the actual biochip implant. It is a passive transponder, meaning it contains no battery or energy of its own. In comparison, an active transponder would provide its own energy source, normally a small battery. Because the passive biochip contains no battery, or nothing to wear out, it has a very long life, up to 99 years, and no maintenance. Being passive, it's inactive until the reader activates it by sending it a low-power electrical charge. The reader "reads" or "scans" the implanted biochip and receives back data (in this case an identification number) from the biochip. The communication between biochip and reader is via low-frequency radio waves.

The biochip transponder consists of four parts:

1. **computer Microchip:** The microchip stores a unique identification number from 10 to 15 digits long. The storage capacity of the current microchips is limited, capable of storing only a single ID number.
2. **Antenna Coil:** This is normally a simple, coil of copper wire around an iron core. This is tiny primitive radio antenna "receives and sends" signals from the reader or scanner.
3. **Tuning Capacitor:** The capacitor stores the small electrical charge (less than 1/1000 of a watt) sent by the reader or scanner, which activates the transponder.
4. **Glass Capsule:** The glass capsule "houses" the microchip, antenna coil and capacitor. It is a small capsule, the smallest measuring 11 mm in length and 2 mm in diameter, about the size of an uncooked grain of rice. The capsule is made of biocompatible material such as soda lime glass.

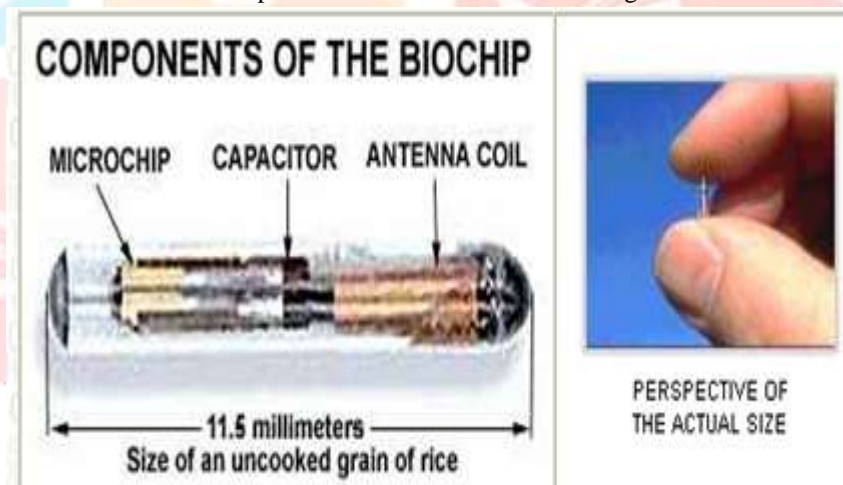


Figure. 1 Components of Biochip

The biochip is inserted into the hand of employee using a hypodermic syringe. Injection is safe and simple, comparable to common vaccines. In dogs and cats, the biochip is usually injected behind the neck between the shoulder blades. According to AVID "Once implanted, the identity tag is virtually impossible to retrieve. . . The number can never be altered.

The reader consists a coil which creates an electromagnetic field that, via radio signals, provides the necessary energy (less than 1/1000 of a watt) to "activate" the implanted biochip. The reader also carries a receiving coil that receives the transmitted code or ID number sent back from the "activated" implanted biochip. This is carried out in milliseconds. The reader also contains the software and components to decode the received code and display the result in an LCD display. The reader can include a RS-232 port to attach a computer.

3.1 CHIP EMPLOYEE:

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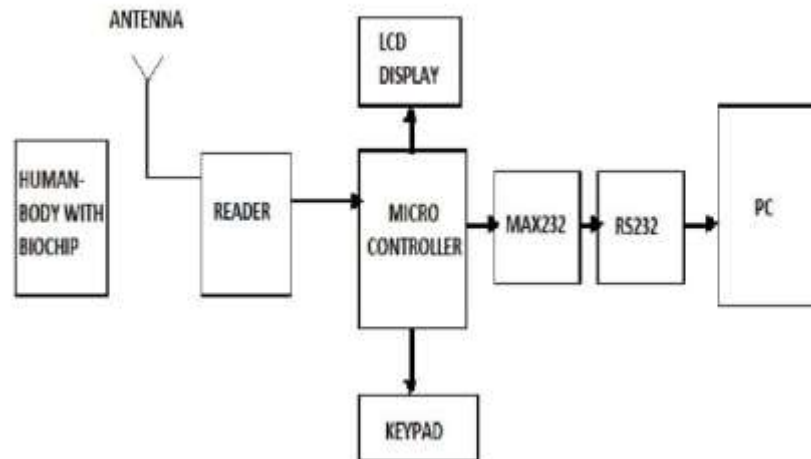


Figure.3 Reading information by using RFID technology

Whenever the human comes near the Reader the information present in the biochip is read by the Reader module and this data read from the Reader is given to the micro controller. In the micro controller already the information is stored of all the people. The micro controller compares both the pre dumped information and the information present in the Reader. And the LCD display system displays the information of passport system. Keypad display is used for security system and using this keypad display we enter the password and this also displays in LCD display system. MAX 232 is used for voltage converter. And RS 232 is used for serial port communication. Actually in MC the voltage levels are (0-5) v and for PC we need more voltage levels. In PC we store the digital photograph of the persons. In this we are using passive RFID tag which has no internal power supply. And for converting the CMOS family to TTL family we are using the voltage converters. And LCD display is used for displays the information regarding the passport system. And keypad is used to enter the password of the system and whether it is correct then it displays in LCD display system [2].

IV. ADVANTAGES

- To find lost people and identify person uniquely
- The chips can be used for employee to login PCs, the RFID chip will be implanted into their hand to "make purchases in their break room micro market, open doors, login to computers, use the copy machine," and other work-related purposes, logging into our office computers, unlocking phones, sharing business cards, storing medical/health information, and used as payment at other RFID terminals,"
- They can perform thousands of biological reactions operations in few seconds.
- In monitoring health condition of individuals in which they are specifically employed.
- The ability to detect multiple viral agents in parallel e.g. differential diagnosis of agents from other diseases that cause similar clinical symptoms, or the recognition of complex mixtures of agents.

V. CONCLUSION

A chip implanted somewhere in human bodies or employee might serve as a combination of credit card, passport, driver's license, personal diary. No longer would it be needed to worry about losing the credit cards while traveling. A chip inserted into human bodies might also give us extra mental power. Biochip used to make a digital employee, E-money system. This paper presents a valuable context addition for those in both academia and industry.

The biochip space lies at the intersection between high technology chip manufacturing, signal processing, software skills and more traditional molecular biology and genomics. The market for biosensors and biochips is interdisciplinary and growing and has applications in a number of core research areas.

REFERENCES

- [1] "Two-Dimensional Electrophoresis in a Chip". Lab-on-a-Chip Technology: Biomolecular Separation and Analysis. Caister Academic Press,2009.[last visited 18-9-2017]
- [2] " Replacing E- passport using bio-chip with unique identification (adhaar id)" Dr.K.Srinivasu Ravi, Seema Kalangi, Veeraiah Maddu / International Journal of Engineering Research and Applications (IJERA) ISSN: 2248-9622 www.ijera.com Vol. 2, Issue 3, May-Jun 2012, pp.1136-1143 [last visited 1-10-2017]
- [3] "Biochip Technology –A Gigantic Innovation" Prof. T.Venkat Narayana Rao1, Sai Sukruthi.G2, Gloria Raj3.Department of Computer Science and Engineering, Hyderabad Institute of Technology and Management [HITAM] Gowdavally, R.R. District, A.P, India [Last visited 17-9-2017]
- [4] "3D Architecture and Replaceable Layers for Label-Free DNA Biochips".Yuksel Temiz, Sandro Carrara*, Andrea Cavallini, Yusuf Leblebici, and Giovanni De Micheli Ecole Polytechnique Fédérale de Lausanne (EPFL) CH-1015 Lausanne (CH) * Corresponding author: sandro.carrara@epfl.ch. [Last visited 2-10-2017]
- [5] "Architecture of a Portable System Based on a Biochip for DNA Recognition". M. Piedade, L. Sousa, J. Germano, J. Lemos, B. Costa INESC-ID/IST R. Alves Redol, 9 1000-029, Lisboa, Portugal.[Last visited 17-9-2017]

