Drug Interaction with EHR Framework and Safe Medical Tags for Reducing Medical Mistakes

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Abstract:
Today cell phones are used for different applications like, smart guide, learning various tools. Online learning classes etc. So, it can also be used for medical applications. In this venture, we have proposed novel method for enhancing social insurance framework with the help of android based cell phones with NFC and Infrared interfaces, smart card innovation. The main purpose of this project is to medical tags decreasing therapeutic human errors and Secure Health Record card for putting away Electronics Health Record (EHR) in light of secure NFC tags, by using Card Emulation Mode. Near Field Communication (NFC) as a short range wireless communication technology facilitates. NFC technology enables the integration of services from a wide range of applications into one single smart phone. NFC technology in a holistic approach from different perspectives, including hardware improvement and optimization, communication essentials and standards, applications, secure elements, privacy and security, usability analysis, and ecosystem and business issues. Mobile phone usage of billions of people throughout the world, that offers diverse services ranging from payment and loyalty applications to access keys for offices and houses. With the help of android application, the patient related data stored in database. RFID application can provide significant benefit to the healthcare industry to ensure patient safety and also to improve supply chain efficiency. In fact healthcare is predicted to be one of the major growth areas for RFID. Which can help avoids some medical errors like giving patients improper prescriptions or someone else treatment. We are going to discuss patient safety culture on important aspect in reducing medical tags.

Keywords: Medical Tags, MobileDoc, mobile based secure healthcare, NFC in healthcare.

I. INTRODUCTION
The main purpose of this paper is to propose the use of medical tags decreasing therapeutic blunders, and secure health card. We present an advanced mobile phone application intended to help patients maintaining a strategic distance from these errors. Secure Healthcare administrations is a need for creating countries, where the cost of human administrations is high and security and insurance are essential issues and making countries like India, where there is a mass population to manage in facilities and healthy human administrations strategies are required[3]. A capable, generous and secure prosperity stream is imperative to supervise patients, their prosperity records effectively and for the right care to reach to the patient at the perfect time. For example, secure identifiers on the medications can push human services capable to direct redress medication to a patient to decreasing problems. Close by this issue, the Patient Health Record organization is fundamental both for patients and furthermore strengthen focus organization[1]. A Health card hung on a mobile phone can hold the entire EHR including reports and tests. The permitted bit can be gotten to securely by an endorsed helpful provider by a clear tap of the phone. Because of the computational capacities the records can be condensed and sorted out for a quick move to be made. We have moreover rapidly said an essential security. NFC technology invalidates many other tags decreasing therapeutic human errors and Secure Health Record card for putting away medical data about the patient. However, this tag does not give Infrastructure NFC Emergency Tags Based on the German Telematics Dunnebeil, Felix Kohler, Philip Koene, .Ian Marco Leimeister, and Helmut Krcmar(2011), combined[6]. Dunnebeil, Felix Kohler, Philip Koene, .Ian Marco Leimeister, and Helmut Krcmar(2011), “Encrypted NFC Emergency Tags Based on the German Telematics Infrastructure”Emergency NFC tags help us to store the medical data about the patient. However, this tag does not give the compose insurance and it can't be reused. NFC fulfills the need to provide secure, short-distance, and implicit paired communication capability in smart phones. The strength of

II. LITERATURE REVIEW
VedatCoskun, BusraOzdenizci and Kerem(2013), "A Survey on Near Field Communication (NFC) Technology", in this paper gives great correspondence between two electronic gadgets. Gadgets can be a cell phone or some other electronic gear's. NFC technology enables the integration of services from a wide range of applications into one single smartphone. NFC technology has emerged recently, and consequently not much academic data are available yet, although the number of academic research studies carried out in the past two years has already surpassed the total number of the prior works combined[6]. Dunnebeil, Felix Kohler, Philip Koene, .Ian Marco Leimeister, and Helmut Krcmar(2011), “Encrypted NFC Emergency Tags Based on the German Telematics Infrastructure”Emergency NFC tags help us to store the medical data about the patient. However, this tag does not give the compose insurance and it can't be reused. NFC fulfills the need to provide secure, short-distance, and implicit paired communication capability in smart phones. The strength of
NFC technology arises from its ease of use by triggering the communication just with a simple touch in a short distance, and terminating the communication immediately as the devices detach[1]. Jason Wu, Lin Qi, Ram Shankar Siva Kumar, Nishant Kumar, and Patrick Tague(2012), "S-SPAN: Secure Smart Posters in Android using NFC", NFC labels are defenseless against spoofing and additionally cloning, so information is put away in the server with high security. With the growth of NFC-equipped smart phones, smart postcards can be use does a low-cost marketing strategy in the field of tourism. This work proposes to utilize NFC tags to develop intuitive advertisements. A wireless router is used to connect the smart phones to a backend and to display aggregated result on an external monitor[8]. Stefan Krone, Bjorn Almeroth, Falko Gudelian and Gerhard Fettweis(2012), "Towards A Wireless Medical Smart Card", Proposed a comparable bigger card utilizing an equipment alter safe SE in view of a micro SD card on a cell phone with NFC and Bluetooth interface. One of the most important aspects of NFC technology is its inherent security, since the communication range is extremely short. In NFC communication, bringing two devices very close to each other starts communication and separating the devices beyond a certain limit terminates the communication immediately[2]. SasikanthAvancha, Amit Baxi, and David Kotz(2012), "Privacy in mobile technology for personal healthcare", we have proposed a novel architecture for improving health care system with the help of android based mobile devices with Near Field Communication(NFC) and Bluetooth interfaces, smartcard technology on tamper resistant Secure Element (SE) for storing credentials and secure data, and a secure health service on a server for security and health record management [3]. M. Reveilhac and M. Pasquet(2009), "Promising Secure Element Alternatives for NFC Technology. Applications are employing Near Field Communication (NFC) technology to interact with physical objects by using NFC tags. To cope with these challenges, this paper proposes a Model-driven Architecture (MDA) where designers are able to model the configuration of the system according to NFC based system requirements. Through a model-to-text transformation process, the MDA also provides developers with templates of source code for the applications that support the system. The proposed MDA process defines a Platform Independent Model (PIM) which supports a Domain Specific Language (DSL) implemented as an Eclipse platform plugin that provides designers with a graphical model editor, and a model to text transformation, to generate the source code templates using the Acceleo transformation language[14]. C. Mulliner(2009), "Vulnerability Analysis and Attacks on NFC-Enabled Mobile Phones", NFC Based Android Mobile Healthcare System in Multi-Agent Environment Ayman M Mansour Abstract In this paper a new healthcare system has been proposed that will provide patients with a NFC tag. The NFC tag contains patient information. NFC smart tag can be used when patients and Elderly People go to hospitals or emergency units. Instead of carrying many files they can simply carry the smart tag[15]. F. bler, P. Koene, H. Krcmar, M. Altmann, and J. M. Leimeister (2010), "LocaTag - An NFC-Based System Enhancing Instant Messaging Tools with Real-Time User Location," The wide adoption of NFC technology in wireless sensor network. Near Field Communication(NFC) evolved from radio frequency identification(RFID) and interconnection technique is intended as a short range communication. NFC is popularized, its security vulnerabilities and protection methods have been widely addressed. Security risk and counter measure of each layer of the security model are described as the foundation of the former works[12]. M. Roland and J. Langer(2010), "Digital

PROPOSED WORK:
We have proposed the design for NFC based secure medicinal services as outlined in Fig. 1 for i) Secure restorative identifiers ii) Health card holding EHR utilizing Android cell phones. We have proposed a protected social insurance benefit like Health Secure on a half and half cloud to which all clinics can buy in[3]. The Health Secure half and half cloud gives administration to keeping up Cryptographic servers for a secure system and. up up Cryptographic servers for a protected framework and Storage server to give fortification and in extra space for widened EHR. Since a greater screen would be more met all requirements to see and invigorate the prosperity records, MobileDoc could either be a NFC engaged tablet, for minimization or a PC with outside sharp card per client.

BLOCK DIAGRAM:

![Block Diagram](http://ijesc.org/)

amount of heat energy or even coldness that is generated by an human being. Temperature sensor high linearity and high accuracy over an operating range of about 55°C to +150°C. AD590 and LM35 temperature sensors are the most popular temperature sensors. BP sensor is used sense or calculates the blood pulse rate by a human being. The Pressure range is -400 to 1000 mbar or -1000 to 400mbar. The full range of the Arduino analog input is from 0 to 1023. The range of output from the Pulse Sensor running at 3.3V is only 0 to 675. We have to scale the Pulse Sensor signal so that it is sized for the larger expected range. A web server is a method of communication between two electronics devices over a network. The software function provided at a network address over a network. It is an open source relational database management system. It is based on the Structure Query Language (SQL), which is used for adding, removing and modifying information in the database. Radio frequency identification technology is having major impact health care industry. By attaching radio frequency tags to different entities (people and object), RFID technology can provide identification, tracking, location, security and other capabilities[18]. In our method, we have proposed the design for NFC based secure medicinal services as, i) Secure restorative identifiers, ii) Health card holding EHR utilizing Android cell phones. We have proposed a protected social insurance benefit like Health Secure on a half and half cloud to which all clinics can buy in administration to keeping up Cryptographic servers for a
secure system and up Cryptographic servers for a protected framework and Storage server to give fortification and in extra space for widened EHR. Adaptable ADMIN is a mobile phone of an endorsed therapeutic head. Android application is the patient's cell phone with the Health card and Mobile Doc is the specialist’s cell phone[3]. The main application of our proposed methods such as useful in emergency and tumultuous conditions like mass populated healing centers, NFC can give essential control of conferring singular records to any approved specialist by the basic tap of portable devices, Bluetooth can be used close by NFC to provide speedier access to bulk data from the mobile phone, NFC can give essential control of conferring singular records to any approved specialist by the basic tap of portable devices[1].

III. MATERIALS AND METHODS

RFID is abbreviation of Radio Frequency Identification. RFID signifies to tiny electronic gadgets that comprise of a small chip and an antenna. This small chip is competent of accumulating approx 2000 bytes of data or information. RFID devices is used as a substitute of bar code or a magnetic strip which is noticed at the back of an ATM card or credit card, it gives a unique identification code to each item. And similar to the magnetic strip or bar code. RFID devices too have to be scanned to get the details (identifying information). A fundamental advantage of RFID gadgets above the other stated devices is that the RFID device is not required to be placed exactly near to the scanner or RFID code reader. As all of us are well aware of the difficulty which store billers face while scanning the bar codes and but obviously the credit cards & ATM cards need to be swiped all though a special card reader. In comparison to it, RFID device can function from few feet away (approx 20 feet for high frequency devices) of the scanner machine.

IV. RESULT AND DISCUSSION

The RF powering circuit is designed and simulated in the HJTC 0.25 μm process together with the whole RFID tag. PCE of the RF powering circuit designed in HJTC 0.25 μm process is simulated under different load current of VCC/VDD. Simulation results are PCE of the circuit is 39.17% when the load current is 520 μA while the tag is in its normal working conditions. In this work, a RF Powering circuit used for passive RFID tags is designed and fabricated with the HJTC 0.25 μm CMOS process. The circuit consists of a rectifier, a bias circuit and a regulator. It provides two stable power sources for the analog and digital parts, respectively. The RF powering circuit achieves high PCE of 38.54% with the HJTC 0.25 μm process under normal working conditions and the power supply voltage is immune to temperature and voltage variations. Measurement results of the tag show that this circuit can provide a stable voltage source for a HF RFID tag chip for its proper operation. Where ΔVCC is the variation of regulator output, Temper is the variation range of temperature; Volt is the variation range of rectifier output voltage. The simulation results of regulator VCC in the HJTC 0.25 μm process. The value of PCE can be calculated with the equation, while and, where is the voltage of the antenna, is the current of the antenna, is the output voltage of the regulator, is the load current of the regulator.

V. CONCLUSION

We have proposed NFC enabled Android cell phones for enhancing Healthcare process for secure medical object ID and patient Health card on an outside tag, another way Health cards can be endorsed by a Health Cards Secure organization on a half and half cloud, to offer administration to redesigned security and broadened stockpiling for wellbeing records. We intend to deal with the engineering of the Wellbeing secure administration later on. The applications are easy to use with an essential touch of NFC for secure correspondence. This will upgrade the prosperity stream in swarmed clinics of creating nations like India and in addition to created countries. The plan of action will profit the patients and in addition therapeutic expert since they can utilize the ordinarily held cell phones advantageously. The cost of the engineering can be lessened by utilizing smaller scale SD cards or UICC cards with inbuilt NFC radio wire. These types of SEs can be issued as Wellbeing cards on a mass scale to lessen the cost and to be operational on non NFC cell phones. We furthermore plan to upgrade the security structure using personality encryption using zero learning affirmations and property based encryption.

VI. REFERENCE


