

## **Secure use of NFC in medical environments**

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### **Abstract**

New services are being included in cellular phones since they appeared. Mobile phones were born as devices whose functionality was limited to voice communication, but nowadays it is a computer in our pockets. A new generation of services comes with NFC technology (Near-Field Communications) and cryptographic SIM cards. We present the deployment of services in medical environments that they can be carried out with NFC. We must make a distinction between these two categories of types of services. On one hand, it will be based on cellular phone, where hospital staff (doctors, nurses, etc.) can manage patient's information, capture data from medical devices and manage of EHR (electronic health record). On the other hand we find a set of services where NFC is used like communication channel to transfer information and to set up of devices implanted in the human body (implants) and other solutions where we take the properties of electromagnetic induction of passive RFID (Radio Frequency Identification) to use as power to recharge batteries of those implants (e.g. pacemakers, glucometers, etc.).

Hence, in this paper we show the various security problems in NFC and some solutions for them. Finally (for all these medical services), we define the desirable characteristics of safety that must be accomplished with cryptographic SIM cards and other technologies, to make this a safe and suitable technology for the medical world.