



Smart Adhaar Card with RFID

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Abstract: SMART Adhaar card with RFID Technology paper is mainly based on the RFID technology. In this paper the technology which issued is Radio Frequency Identification technology (RFID); There is an RFID card which is issued to each and every citizen with a unique identification number in it. This card is used as unique identification number in various aspects like epassport, smart parking, hospital details and driving licence which has been explained in the following paper.

Keywords: RFID, CPV, UART, BWI, NIC.

I. INTRODUCTION

In access control system the Radio frequency identification (RFID) technology is being widely used. Based on the embedded systems the control modules are developed. Embedded systems are becoming increasingly common. Due to the fast deployment of advanced microcontrollers embedded systems are becoming increasingly common at an affordable price offering high processing speeds and allowing for reliable and simple use of Open Source software. A microcontroller with a standard Ethernet interface is used in the presented system, to validate users using an RFID Card. In a central database or locally the user credentials are validated. Access is given to the authorized users of the reserved areas. A very complex and flexible high level administration and management functions can be implemented with the use of a powerful database. Everybody is aware about the Indian government's Adhaar card. Infosys Technologies has prepared a unique identification card technology. This is a modified version of the AADHAAR card. This card is unique for each and every citizen in India. It is basically a Radio Frequency Identification card, through which the particular details of a person can be accessed.

The four modules of this RFID card are as follows

- ✓ ePassport
- ✓ Hospital Details
- ✓ Smart Parking
- ✓ Driving Licence

I.ePASSPORT

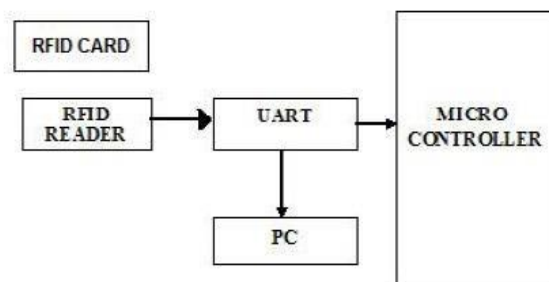
SMART Adhaar Card with RFID modules having all the necessary details of the passport, like address all issued visa, Name, photograph and Identification. This module consists of date of issue, history of visa and all expiry details. This smart Adhaar card is now act as aPassport, and there is no need to take the passport separately. No

need of carrying a passport booklet with the help of this card. Smart adhaar card can be used in various purpose like in National Information Centre (NIC) the database size is reduced and very much easier to update, maintain and make changes and Indian government on official business. The smart adhaar card can also be used for selecting passport offices in India as well as in overseas. The objective is only to authorize to issue Regular Indo SriLankan passports and Indo-Bangladesh passports, to Indian nationals resident in north eastern states, West Bengal, Pondicherry and Tamil Nadu. These two passports are valid for travel to SriLanka and Bangladesh only and are not valid for travel to other foreign countries. There is only one card which works for all type of passports. This smart adhaar card not only deals with passport but also in many other domains which are given below. The problem to be faced in this particular domain of traditional passport is the issue of VISA and the other important fields of passport. The major drawback in this traditional passport is that when the pages are over in the passport there is a need to go for renewal of new one. But in this Smart adhaar card passport system there are no problems of issuing a new one or chances of getting over with the pages. There are unlimited storage of visa. This problem solves another important drawback of traditional passport. For the purpose of international travel the traditional passport is issued to only citizens of India. It act as a proof of Indian nationality. The Consular Passport & Visa (CPV) Division of the Ministry of External Affairs, functioning as the central passport organisation, and responsible for issuance of Indian passports to all the eligible Indian citizens.

We have only one card which will work for all type of passports. This project not only deals with passport but many other domains which are given below. In this



particular domain of passport we mainly deal with the issue of VISA and the other important fields of passport. The another important drawback on the traditional passport is that when the pages get over in the passport we have to go for renewal of new one but in this RFID passport system we don't have to issue a new one as there is no pages involved in this card, there is no chance of getting over with the pages for visa. There is unlimited storage of visa. It will help overcome another important drawback of traditional passport system.



Fig(a). Block Diagram of the Hardware.

I.2 Medical Details

As in case of an emergency or accident it will not be possible for any user to provide authentication so not too much verifications will be done at that time. Therefore in this module there is no need of authentication. Too much we have to save peoples life first.

Only the main purpose of this relevant RFID card is that to keep the medicals records of each and every person. That help the doctors to prescribe the medicine easily as they got the all previous records as their blood pressure, sugar, thyroid, blood group etc.

I.3 SMART PARKING

It first includes automating the car parking payment facility in which the RFID card first checks for the available balance in the card (RFID acts as a Smartcard) and deducts the parking charges from the available amount in order to reduce the risk of escaping. It also reduces the problem of tender exchanges in the parking fee gates and carrying cash.

The airport has installed a smart parking system for its daily and hourly garages, which is in total 13 there are 200 parking spaces. Sensors are embedded in each parking space at BWI Airport to detect whether the space is occupied, and that information is stored into a central parking management system.

It contains the RFID reader, microcontroller 8051 along with the filters. Transformer which converts 120v to 12v. When the card comes near the scanner or the coil then it displays a buzzer which produces the sound. When the card comes within the range of the reader then only the sound comes out. Therefore the card is ready by the RFID reader.

III. WORKING MODEL

In this working model, the RFID scanner reads the RFID tag or Card and the signal is sent to the PC and then the four modules is displayed. The computer displays four modules which are showing the given figure.

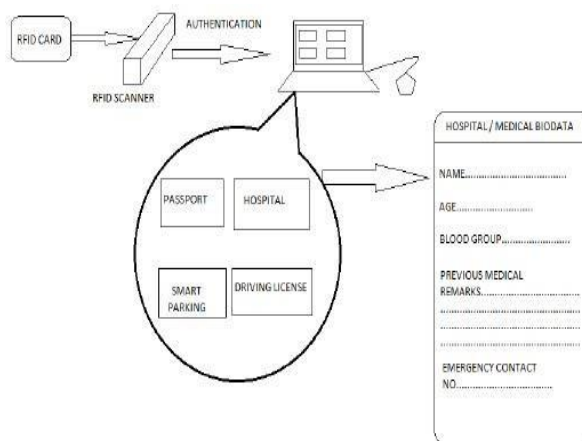


Figure (b). : Working model of the RFID technology

II. STRUCTURAL BLOCK DIAGRAM OF THE HARDWARE

As below in the diagram fig(a) the RFID reader is connected to the microcontroller with the help of UART and UART is also connected to the PC or laptop and the PC or Laptop only executes the software part and displays the forwarding the displayed form only the different modules is showing in which the data can be entry and can keep the updates. This is the technology used in the smart adhaar card where there source is used properly and in a more structured manner.

In the fig (b) as shown in the right hand side a demo is displayed. On clicking the Hospital button another form is displayed which same is given in the figure (b) demo having all the necessary hospital details. In the same way it can work for each and every module.

The given diagram consists of all the hardware requirements for the RFID technology used in this adhaar card.

IV. CONCLUSION

Smart adhaar card using an RFID technology has been implemented bring a substantial difference in the Indian Government, by helping them introducing the SMART AADHAR CARD with digital India.



- The procedures which is used for applying passport and driving licence is easy and quick with the help of this card.
- In case of emergency and accident, the details about the patient and his medical history can be accessed.
- Classical parking system can also be improved by making the parking charges payment automated which is making the process faster and problems related to exchanges are also solved.
- The traffic police department can be easily checked by the traffic police department for the validity and other related issues. Only the administrator can make the changes in the database.
- Smart Adhaar card can also act as an identity card having the permanent address

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BIOGRAPHIES



Nawal Kishor is a student Of Computer Science Engineering from NIET, Gr. Noida and he is writing his first research paper in the area of Digitalization by using the emerging technology as a RFID Technology. Enriched with ability to quickly understand & implement new technologies.

Education and Credentials:

He is pursuing his Bachelors of Technology from Noida Institute of Engineering & Technology.

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