DUAL LAYER SECURITY SYSTEM WITH CAMERA

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ABSTRACT

RFID based Secured access system implemented on 8051 microcontroller. This is a very useful application of RFID (Radio-frequency identification) and is very commonly used in institutes, offices, homes and so on. An RFID system consists of a reader device and a transponder. A transponder or tag has a unique serial number which is identified by the reader. Here RFID has been interfaced with AT89C51 to provide secured access. The relevant messages are also displayed on a computer screen.

RFID automated access for door controls to buildings, departments, rooms, secured closets (wiring, PBX, etc.) and cabinets is very cost effective and secure to use. Many people do not realize how easy it is to implement card access systems such as card access door or doors using RFID readers and RFID Cards or Key fobs for Secured Access Control Management. You can even use smart readers for computer rooms and securing individual computers. In fact access based entrance and exits using access smart technology is rapidly becoming the way of the future for many businesses, government buildings, hospitals, museums and other establishments requiring secured but easy to control access solutions. Access based systems use either 125 kHz RFID or 13.56 MHz RFID readers, cards and key fobs.

Keywords: System Security Management, ERP, Enterprise Systems, Network Security Pattern, Identity Authentication

I. INTRODUCTION

RFID technology is based on the concept of magnetic coupling, which is the principle that current flowing in one circuit can induce current flow in another circuit through a magnetic field generated in the space between the circuits. In passive RFID, there are two major components: the reader and the mobile tag. The reader has two main functions: the first is to transmit a carrier signal, and the second is to receive a response from any tags in proximity of the reader. A tag needs to receive the carrier signal, modify it in some way corresponding to the data on the card, and retransmit the modified response back to the reader. In modern passive RFID devices, the tag consists of a small integrated circuit (that performs the modulation) and an antenna. The benefit of passive RFID is that it requires no internal power source; the circuit on the tag is actually powered by the carrier signal. Thus, the carrier signal transmitted from the reader must be considerably large so that the response can be read even from the card. As shown in the above block diagram RFID systems are classified according to the

properties of the data carrier called a transponder or tag. The two major classes of RFID transponders are active and passive. Active transponders contain a battery or are connected to an external power source. Active transponders are capable of longer communication distance and can perform data collection tasks even when no reader is present.

II. RELATED WORK

When a person want to enter in the room or cabin he/she has to show his/her card on the card reader and if the card number is in the database then the system requires the user's password and if the password is matched with the database then the person is allowed to enter in the cabin or particular area. If the user enters the wrong password the system shows it is a wrong password and tells to enter it again. If the user enters wrong password continues three times then the door will not open and the buzzer will start at the same time the provided camera will take the picture of that person. The doors always open from the inner side, a push button is provided inside the cabin to open to the door from the inside, the person has to press only the that push button.

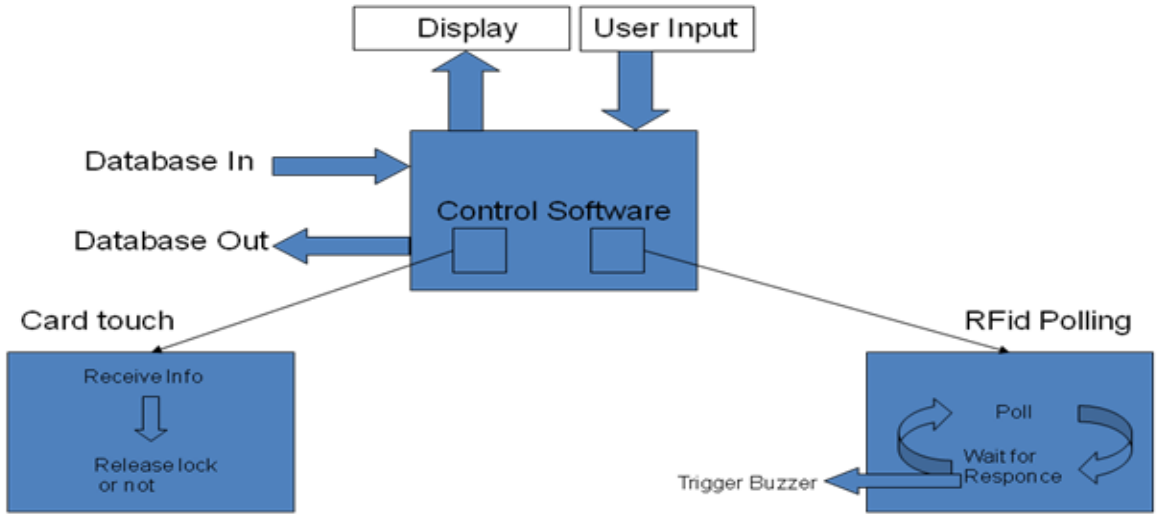

Figure 1: Block diagram of the Dual Layer Security System

III. PROPOSED METHODOLOGY

After analysing the security conditions in current Enterprise Systems (ES), this paper proposes a systematic framework that is based on the RFID for improving security management. This framework takes account of several key aspects such as workstation authentication, identity authentication, security workflow, etc. The proposed framework has the following advantages: low cost, high performance, easy to implement, and strong security control pattern. In addition, this paper proposes a dynamic security strategy that is about authorizing user ID and roles dynamically and conducting real-time mapping via agent or proxy technologies. It based on the RFID identification of anyone to enter in the secure area. When a person want to enter in the room or cabin he/she has to show his/her card on the card reader and if the card number is in the database then the system requires the user's password and if the password is matched with the database then the person is allowed to enter

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IV. APPLICATIONS

- Automatic Vehicle identification
- Inventory Management
- Work-in-Process
- Container/ Yard Management
- Document/ Jewellery tracking
- Patient Monitoring
- Access management
- Tracking of goods
- Tracking of persons and animals
- Toll collection and contactless payment
- Machine readable travel documents
- Smart dust (for massively distributed sensor networks)
- Tracking sports memorabilia to verify authenticity
- Airport baggage tracking logistics

V. POSSIBLE FUTURE MODIFICATIONS

- Antenna for RFID that matches the impedance of the system to improve RFID reading range.
- Cameras can be added to improve surveillance of the room.
- The Wireless signal could be encrypted to improve security of incoming and outgoing signals.
- Special RFID override tags could be given to administrators to remove items not permitted by others.
- Live inventory control can be added.

VI. MOTIVATION

Our final year project is RFID based Dual layer Security System. This idea came to our mind when we saw our lecturers taking the attendance of 100s of students very hardly. We thought we can integrate the RFID based Security System with attendance system as well. We thought that we can also implement this in the labs which have costly equipments and data in it. That what our final year project is doing.

VII. CONCLUSION

RFID based Secured access system implemented on 8051 microcontroller. This is a very useful application of RFID (Radio-frequency identification) and is very commonly used in institutes, offices, homes and so on. An RFID system consists of a reader device and a transponder. A transponder or tag has a unique serial number which is identified by the reader. The relevant messages are also displayed on a computer screen. The two major classes of RFID transponders are active and passive. Active transponders contain a battery or are connected to an external power source. Active transponders are capable of longer communication distance and can perform data collection tasks even when no reader is present.

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