RFID BASED SECURITY GUARD SYSTEM USING GSM

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Abstract - *This paper describes the different features and technologies present in RFID based security guard system using GSM by overviewing multiple research done over time. In today's world, security is a very important part of technology. Presently, security is provided manually to various institutions, places etc. Because of this, we require human power. The old security system need to be replaced by automated one where system will work for guidance and detection of strangers using RFID tags. A GSM module will be attached on the project or Bluetooth connectivity can be used or Wi-Fi can be used. In this paper we are trying to review different technologies and is able to provide security to the campus, hospital, etc.*

*Key Words***: RFID, GSM, Wi-Fi, Bluetooth.

1. INTRODUCTION

In Most educational institution's administrators are concerned about campus security. The conventional method allowing access to employee inside an educational campus is by showing photo I-cards to security guard is very time consuming and insecure, hence inefficient. Radio Frequency Identification (RFID) based security system is one of the solutions to address this problem. This system can be used to allow access for student in school, college, and university. It also can be used to take attendance for workers in working places. Its ability to uniquely identify each person based on .security access easier, faster and secure as compared to conventional method. Students or workers only need to place their ID card on the reader and they will be allowed to enter the campus. And if any invalid card is shown then the buzzer is turned on.

The need to secure our home, industries and other related properties has been a subject of interest since the days of our fore fathers, Since then, an aggressive development in the area of security has exponentially been driven to today's trend. A system cannot have high assurance if it has poor security and requirements . For high assurance, systems will logically include security requirement as well as availability, reliability and robustness requirements .

The early-men, in their effort to provide security to their house-hold and properties, used crude measures such as stones, grasses and crude weapons to secure themselves. As the intrusion techniques by intruders outgrows the then security measures and more values added to lives and properties, ore sophisticated measures were developed to ensure an intruder proof environment, which today, has become one of the most interesting aspect of individual, National and even international concern.

2. LITERATURE SURVEY

2.1 Microcontroller Based Security System with Intruder Position (January2014)

Diarah Reuben Samule,Ojongbede,H.A

This paper proposes microcontroller Based Security System with Intruder Position Display is a design that applies automated security system in homes, Industries, military etc. The project will feature a system that will track the presence of an intruder in restricted area and also inform the user about the position of the intruder. This Project will be based on microcontroller and other electronic design to achieve the above stated purposes. The interfacing medium will make use of parallel port. The sensors (Light Dependent Resistor and LEDS) will receive the signal when the intruder is around while the control program will translate the received signal from the sensors to useful information about the function of the system.

In this project they have implored the use of both hardware and software to bring about the entire project. The hardware components are solely coordinated by the AT89S51 microcontroller chip while the C programming language is used to program the chip.

2.2 Security System in Speech Recognition (August 2014)

Sunita Dixit, Dr. MD Yusuf Mulge

This paper describes that speaker recognition is one of the effectively used biometric authentication system that actually identify the speaker on the basis of vocal characteristics. The speaker identification depends on different voice features such as the intensity analysis, voice pitch analysis, voice feature extraction etc. This recognition process is also affected from different factors such as the background noise, instrumentation noise etc. In this paper, noise effective approach is suggested to define an effective speaker recognition process. The robustness of the recognition system is improved with the definition of an integrated layered model. Keywords: Speech Enhancement, Spectral Subtraction, LPC, HMM, ANN. Speech is the most sophisticated signal naturally produced by humans. The

speech signal carries linguistic information for sharing of information and ideas. It allows people to express emotions and verbally share feelings. It is the most fundamental form of communication among humans. The aim of digital speech processing is to take advantage of digital computing techniques to process the speech signal for increased understanding, improved communication, and increased efficiency and productivity associated with speech activities. The field of speech processing includes speech analysis and representation, speech coding, speech synthesis, speech recognition and understanding, speaker verification, and speech enhancement.

2.3 RFID and GSM Based Campus Security System (April2015)

Abhijit K. Shinde, Raghunath R.Harade,Chetan M.Gaikwad.

This paper represents the RFID and GSM technology. The main objective of the system is to uniquely identify and to make security for a person. This requires a unique product, which has the capability of distinguishing different person. This is possible by the new emerging technology RFID (Radio Frequency Identification). The main parts of an RFID system are RFID tag (with unique ID number) and RFID reader (for reading the RFID tag). In this system, RFID tag and RFID reader used are operating at 125 KHz. The microcontroller internal memory is used for storing the details. KEYWORDS: RFID Tag, RFID Card Reader, GSM, DDRAM, EPC Tags. Most educational institutions' administrators are concerned about campus security. The conventional method allowing access to employee inside an educational campus is by showing photo I-cards to security guard is very time consuming and insecure, hence inefficient. Radio Frequency Identification (RFID) based security system is one of the solutions to address this problem. This system can be used to allow access for student in school, college, and university. It also can be used to take attendance for workers in working places. Its ability to uniquely identify each person based on .security access easier, faster and secure as compared to conventional method. Students or workers only need to place their ID card on the reader and they will be allowed to enter the campus. And if any invalid card is shown then the buzzer is turned on.

2.4 RFID Based Security Access Control System with GSM Technology (2016)

Peter Adole, Joseph M. Mom and Gabriel A. Igwue

This paper describes the various security challenges being encountered in many places today require electronic means of controlling access to secured premises in addition to the available security personnel. Various technologies were used in different forms to solve these challenges. The Radio Frequency Identification (RFID) Based Access Control Security system with GSM technology presented in this work helps to prevent unauthorized access to controlled environments (secured premises). This is achieved mainly through the use of a Radio Frequency Identification System with operating frequency of 125 KHz, Microcontroller

programmed to send control signals, DC motor, relay, buzzer, Liquid Crystal Display (LCD) and GSM/GPRS Modem. Once the RFID tag which contains the user's unique information is scan by the RFID reader and confirmed match with the information stored in the microcontroller, the microcontroller is instructed to turn ON the DC motor through L293D driver, display "USER NUMBER and CARD NUMBER" on the LCD and activates the GSM/GPRS modem to send SMS alert "AUTHORIZED, valid RFID card shown, User is allowed to enter, user number" to security personnel. Else, the DC Motor remained OFF, LCD displays "READ RFID CARD NOT VALID", buzzer turns ON for about 5seconds and GSM/GPRS modem activated to send " UNAUTHORIZED, invalid RFID card is used to access the security system" to the security personnel. The electronic circuit was implemented, the codes for microcontroller were written in assembly language, debugged and compiled using the KEIL Micro vision 4 integrated development environment. The resultant Hex files were programmed into the memories of the microcontrollers with the aid of a universal programmer. Hardware simulation was carried out using the Proteus Virtual System Modelling (VSM) version 8.0.An importation implication of this paper is that the system is cheaper to maintain and more efficient in comparison with a manually operated type or key lock system. The RFID based access control system can be useful in providing security for homes, organizations, and automobile terminals to increase the level of security. Keywords: Access control, Authorized, RFID, GSM, Microcontroller, Unauthorized.

3. CONCLUSION

This paper review wide range of technologies involved in Security systems. As the technology is getting advanced features of security systems are also enhanced. It is highly efficient and accurate because it detects the RFID tags and if security system choose short cut then RFID reader reads an instruction given. Every technology discuss above has its own advantages and disadvantages and by using them we can design a more efficient security guard systems.

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