



International Conference on Systems, Science, Control, Communication, Engineering and Technology 2016 [ICSSCCET 2016]

ISBN	978-81-929866-6-1
Website	icsscet.org
Received	25 – February – 2016
Article ID	ICSSCCET094

VOL	02
eMail	icsscet@asdf.res.in
Accepted	10 - March – 2016
eAID	ICSSCCET.2016.094

Design for Wellbeing Defense on Voting Machine

C H Ram Manoger Lokiya¹, E Vichitra², A Shanmugam³, R Selvamani⁴, R Shiyam Raj⁵

¹Assistant Professor, ^{2,3,4,5} Department of Electronics and Communication, Karpagam Institute of Technology, Coimbatore.

Abstract: Elections in India are conducted almost using electronic voting machine. It has some defects in its security, in order to overcome the defect it need to be secured. The purpose of our project is to add some security to the voting machine by adding a biometric scanner followed by the barcode scanner. Initially the voting machine is set off. The voter id card is verified using bar code scanner. The biometric scanner is turned on and the finger print is verified then it is accumulated to the server. After the verification the voter is allowed to poll the vote.

Keywords: Illegal voting, Barcode scanner, Biometric scanner, GSM, Server.

1. INTRODUCTION

Now a days elections in India are conducted by using Electronics Voting Machine. The candidate can poll a vote by using their voter id card. But some peoples polls the vote twice by using an another id card or with the help of higher authorities influence. In order to reduce the illegal voting we must use a security in EVMs.

Description

2.1 Voter ID Card

It contains the information about an individual voter which is given by an authorized organization (Indian Government). In olden days the voter id purely made on papers but now it is given like smart card i.e. it consist of unique barcode number for individual voter, by using this number we can easily get the details about the user which is provided in the server.

2.2 Bar Code Reader

The barcode reader is an Automated Data Collection technology. It is used to get the details of voter which is accumulated in server. There are primarily four types of technologies used to read barcode. These are Pen type Reader, Laser Readers, CCD Reader and Camera based Reader.

In this system the barcode reader reads the unique number from the id card. By using this number the details of the voter is obtained from server through the GSM Module.

2.3 LCD Display

LCD: Liquid Crystal Display is used to display the present words, digits in 7-segment displays as in a digital clock. In this system the display is used to display the details of the voter which is gathered from the server through the GSM module

This paper is prepared exclusively for International Conference on Systems, Science, Control, Communication, Engineering and Technology 2016 [ICSSCCET 2016] which is published by ASDF International, Registered in London, United Kingdom under the directions of the Editor-in-Chief Dr T Ramachandran and Editors Dr. Daniel James, Dr. Kokula Krishna Hari Kunasekaran and Dr. Saikishore Elangovan. Permission to make digital or hard copies of part or all of this work for personal or classroom use is granted without fee provided that copies are not made or distributed for profit or commercial advantage, and that copies bear this notice and the full citation on the first page. Copyrights for third-party components of this work must be honoured. For all other uses, contact the owner/author(s). Copyright Holder can be reached at copy@asdf.international for distribution.

2016 © Reserved by Association of Scientists, Developers and Faculties [www.ASDF.international]

Cite this article as: C H Ram Manoger Lokiya, E Vichitra, A Shanmugam, R Selvamani, R Shiyam Raj. "Design for Wellbeing Defense on Voting Machine". *International Conference on Systems, Science, Control, Communication, Engineering and Technology 2016*: 486-489. Print.

2.4 MICRO Controller

All the functions of this system are carried out by microcontroller. It has multiple serial interfaces including two UARTs, with the help of that we can interface GSM module to the controller. It is well suited for the future up gradations.

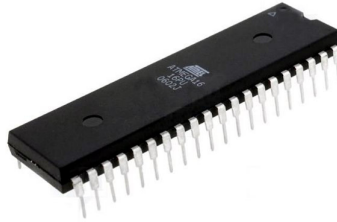


Fig 1. Atmel: 40 pin microcontroller

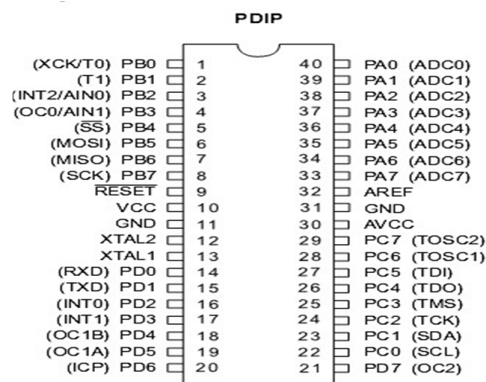


Fig 2. Atmel: microcontroller pin diagram

2.6 Features of ATMEL Microcontroller

- High Performance, Low Power Atmel® AVR® 8-bit Microcontroller
- Advanced RISC Architecture
- Data and Non-Volatile Program Memory
- 16/32/64K Bytes Flash of In-System Programmable Program Memory
- 512B/1K/2K Bytes of In-System Programmable EEPROM
- 1/2/4K Bytes Internal SRA
- Write/Erase Cycles: 10,000 Flash/ 100,000 EEPROM
- Data Retention: 20 years at 85°C/ 100 years at 25°C
- Programming Lock for Flash Program and EEPROM Data Security
- Direct Power Supply Voltage Measurement
- 10-bit DAC for Variable Voltage Reference (Comparators, ADC)
- Operating Voltage: 2.7V - 5.5V
- Extended Operating Temperature:
- -40°C to +85°C

2.6 Biometric Scanner

(Finger Print)

Finger print recognition technique is used to identify the concern person. Three basic patterns used in finger print sensors. They are arch, loop and whorl.

Cite this article as: C H Ram Manoger Lokiya, E Vichitra, A Shanmugam, R Selvamani, R Shiyam Raj. "Design for Wellbeing Defense on Voting Machine". *International Conference on Systems, Science, Control, Communication, Engineering and Technology* 2016: 486-489. Print.

Every person has a unique finger print. Finger print sensor is used to capture a digital image. Finger print scanning biometrics is based on the distinctive characteristics of the human finger print. A finger image is read from a captured device.

The biometric scanner scans the finger print of the voter and then transmit it to the server through the GSM. The server saves the finger print with the particular voter detail.

2.7 GSM Module

GSM: Global System for Mobile Communication is generally known as 2nd generation standard which is widely for commercial purpose.

In this system this module is used to transmit the data server to a display or server to a nearer police station based on the signal from the detector.

2.8 Detector

In this system detector is used to compare the finger print of current voter to previously voted voters. Based on this output the GSM module works.

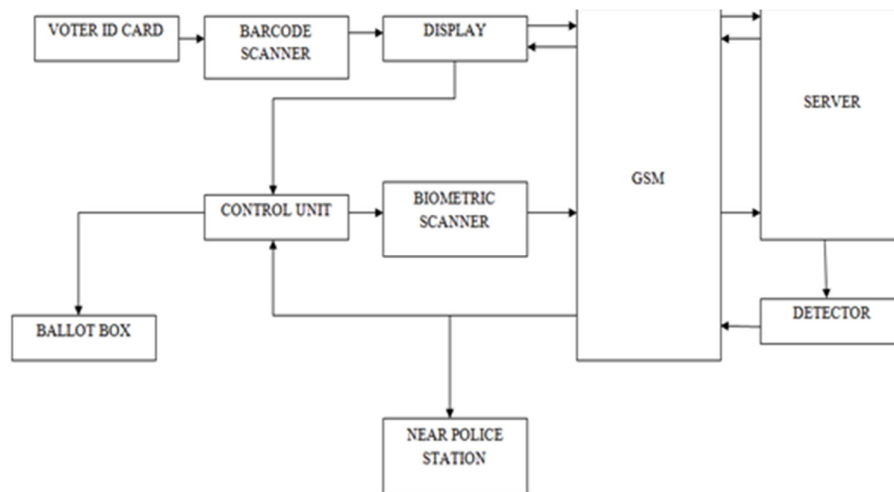
2.9 Server

This is the main database, in this the details about the voter is stored and finger print of the voter which is noted from the Biometric scanner is also stored.

3 The Illegal Voter Identification

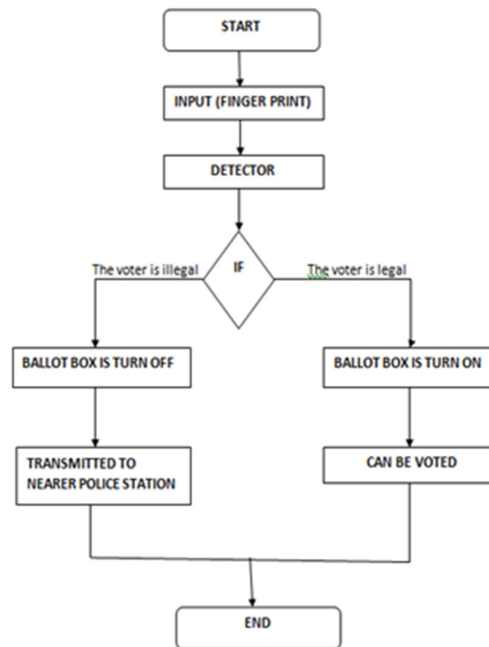
When the voter poll his vote the server saves his finger print using the biometric scanner. If he tries to poll vote 2ndtime the detector compares the finger print of current voter to previously voted voters. If the vote of that finger print is already polled, then the information about the voter is transfer to nearer police station.

4. Implementation



- Initially the barcode reader reads the unique number of voter id and transmit to the server through the GSM to get the details about the voter which is displayed on the display.
- In this method, the id card is verified. Then the voter allow to next step i.e verification of finger print. This is done by biometric scanner. The GSM sends the finger print of voter to the server. The server saves the finger print to that particular id card's detail.
- The detector compares the current voter's finger print to the previously voted voters finger print.
- If the current voter's finger print is matched, then the details of voter is forwarded to nearer police station.
- Otherwise the voter is allowed to poll a vote.

5. Flow Chart



The above flow chart shows the function of a control unit i.e one of the functions of micro controller,

- In this the finger print of the voter is consider as the input (of the biometric scanner) and then stored to the server.
- The detector compares the current voter's finger print to the previously voted voters.
- If the detector output is YES (the voter is legal) then the voter is allowed to poll a vote.
- If the detector output is NO (the voter is illegal) then the details of the voter is transfer to nearer police station.

6. Process Description

- When the voter tries to poll a vote for second time, the barcode reader gets the id card details.
- The next one is Biometric scanner, in this we can read the finger print of the voter. If the voter is already voted then his/her finger print is already accumulated in the server. The detector identifies the finger print and transmit the information about the voter to the nearer police station.

7. Conclusion

From the above Module and our experimental study we have found that is by using the bar code reader and biometric scanner voting system we can easily reduce the double voting or illegal voting.

8. References

1. V.H.Macdonald, "The cellular concept", Bell Syst. Tech. J., vol. 58, no. 1, 1979
2. K.N.Sivarajan, "Performance limits for cellular system with handoffs", proc. 31st annu. Allerton Conf. Communications, Control, and Computing, vol. 19, pp.887-897, 1993
3. S. Sarkar and K.N. Sivarajan, "Fairness in cellular mobile networks", 1997, Lab. Resource Allocation in networks, Elec. Comput. Eng. Dept., Indian Institute of Science
4. ZeenaMarchant, Biometrics: Fingerprint Authentication, SANS Reading Room, <http://rr.sans.org/authentic/fingerprint.php>
5. Samir Nanvati, (2002), Biometrics: Identity Verification in a Networked World, New York: Wiley and Sons, Inc.
6. Julian Ashbourn. (2002), Biometrics: Advanced Identity Verification, London: Springer-Verlag, p. 5.
7. Manoj Gupta, Biometric Technologies Overview, SANS Reading Room, <http://rr.sans.org/authentic/biometric2.php>
8. Stephen J. Shellhammer, "Novel signal-processing techniques in barcode scanning", IEEE Robotics & Automation Magazine, pp. 57- 65, 1999
9. W. turin and R. A. Boie, "Bar code recovery via EM algorithm", IEEE Trans. On PAMI, vol. 46, no. 2, pp. 354-363, 1998