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Digitalized Electronic Voting System

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Article Info	ABSTRACT
	In the present scenario, Electronic Voting Machines ("EVM") are being used in India, generally for state elections. These EVMs are being used since 1999 upto till date. The EVMs reduce the time for both casting a vote and declaring the results when compared to the old paper ballot systems, up to 2004 there is no Tampering and security provided for EVMs after 2004 Supreme court and Election Commission decided to introduce EVMs with Voter Verified Paper Audit Trail(VVPAT) system but it also having some difficulties like missing of names in the voter list, requirement of huge manpower, storing of EVMs for counting purpose etc, so our proposed method is useful to overcome above problems in the voting system by using the Biometric and Aadhaar information.

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1. INTRODUCTION

The Electronic Voting system was invented by M.B.Haneefa in 1980 and counting machines which were operated electronically were registered on 15 October 1998 and it is being used since 1999 up to till date. Indian voting machine consists of two units, control unit and ballot unit and these two units are connected with a five-meter cable. The control unit is with the presiding officer or a polling officer and the ballot unit is placed inside the voting compartment, instead of issuing a ballot paper, the officer-in-charge of the control unit will press the ballot button. This will enable the voter to cast his vote by pressing the blue button on the ballot unit against the candidate and symbol of his choice.
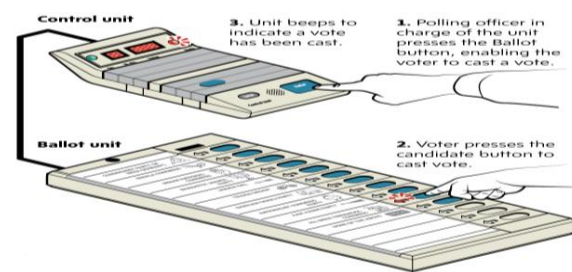

Figure 1. The present EVMs

In 2004 elections the Supreme court and Election Commission decided to introduce EVMs with Voter Verified Paper Audit Trail for the increasing the security and reduces the tampering in voting system,

even though it is having some drawbacks like missing the names of candidates in the voter list, huge manpower is required and storing the EMVs for counting purpose, for this type of problems we used the Biometric system and Aadhaar information of the voter.
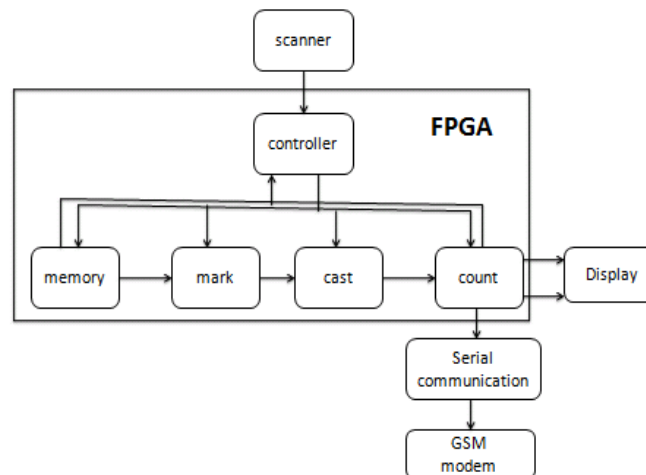
2.   BLOCK DIAGRAM

Figure 2. Block Diagram

2.1   Scanner: This scanner is used to scan RFID card and Biometric system. These scanners are used to especially scan RFID card and Biometric as they have a unique id and unique image respectively.

2.2   FSM Machine: FSM machine is also called as controller because it is used to control the present and next states of the voting machine. Based on the present and next states, the voter details are loaded, verified, marked and finally the vote is casted.

2.3   Memory: The details of all the voters are stored in the memory. Before verification of the voter in the voters list, the details of voters are to be loaded into the memory.

2.4   Mark: Initially, the MSB's of all voter card numbers are zeros. After the verification, marking is done which is known as digital marking. After casting the vote, the MSB of verified voter card number turns out to 1.This cannot be changed even by the polling officer or anyone else.

2.5   Cast: The voter details are loaded and then the verification is done. If the voter details are found in the voter list then the digital marking is done, then the voter is allowed to cast his/her vote, the voter chooses the particular party and cast his/her vote, after casting the vote the count value of that particular party will be incremented. If else, the voter is not capable of cast his/her vote.

2.6   Count: The voters will cast their vote for their corresponding parties and the number of votes casted for those parties will be stored.

2.7   GSM Modem: The stored number of votes casted for the corresponding parties in the count will be sent to GSM Module through serial communication. This GSM Module will send a message to the registered mobile.

2.8   Display and Buzzer: If the unique code on the RFID card mismatches or if the Biometric system mismatches with the stored data, a display will be appeared indicating that the voter is unauthorized and the buzzer is blown.

3.   WORKING

The unique id present on the RFID card of the voter is scanned, compared and fetched from the data which is stored in the memory. If the unique id mismatches with the data the display and buzzer will be enabled. If the unique id matches with the data present, then the voter is allowed to take Biometric scan and is compared with the fetched data. If the Biometric scan mismatches with the fetched data the display and buzzer will be enabled.

If the scanning is successful the position of the MSBs is checked in the mark whether it is present in the position of "0" or "1".If the MSBs position is in "0" then the voter is allowed to cast his/her vote otherwise, the display and buzzer will enable.

The casted vote is stored in the count and it is incremented for every vote of the corresponding party. At the end of voting time, the whole data in the count will be sent to GSM Modem through serial communication. The GSM Modem will send a message to registered mobile.
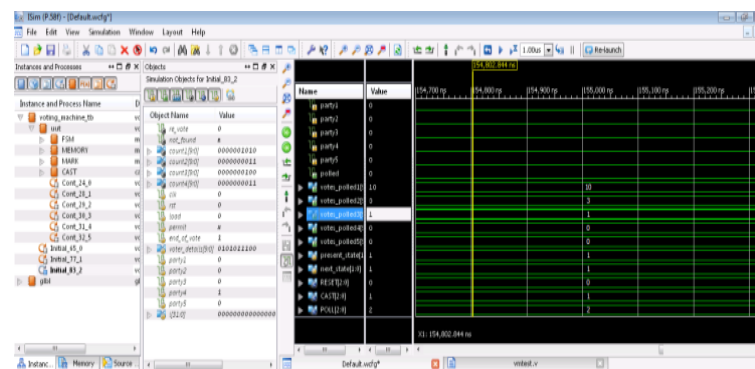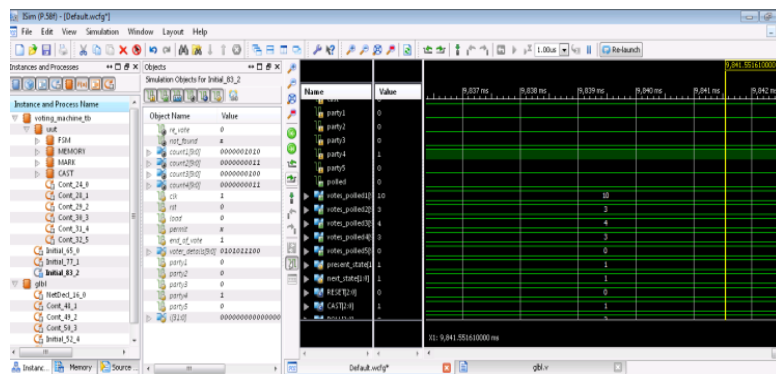
4. RESULTS
MARKING

CASTING

FSM MODULE

Digitalized Electronic Voting System (Dukka Bindu Venkata Raghav)
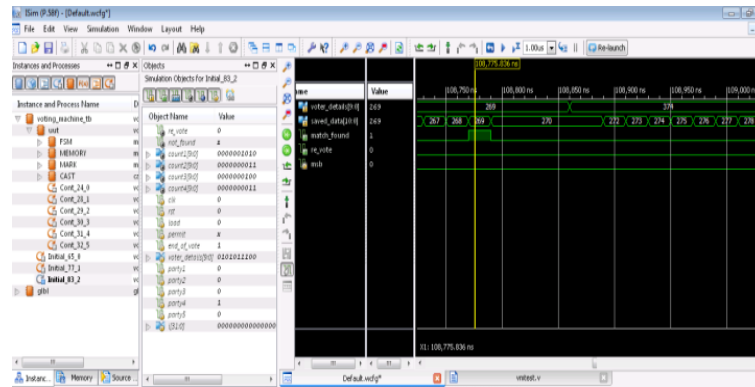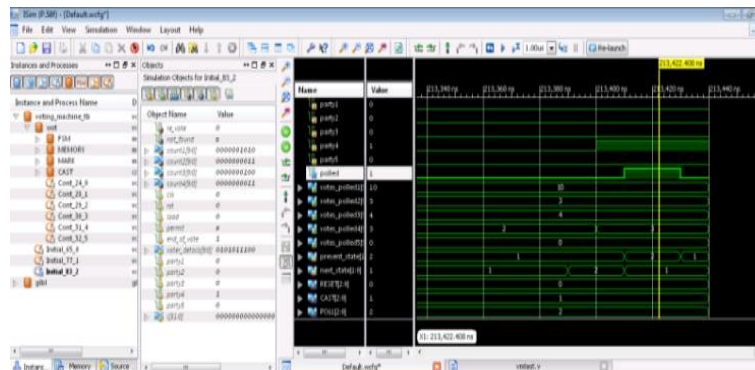
COUNT

HARDWARE

5. CONCLUSION

Digitalized Electronic Voting System has been replaced by traditional mechanism of voting due to several advantages like security, automatic counting etc. This voting system is emerging as significant alternative to the conventional systems in the delivery of reliable, trusted elections, reduces man power, no need to store EVM's for counting purpose and gives election results in less time. In future we can cast the vote through online, in which the voter can cast his vote from any place in the state to the registered polling booth.

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