

IRIS BASED E-VOTING SYSTEM

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Abstract— This is a concept of interfacing a iris scanner with that of the electronic voting machine. The retina scanned image is compared with that of the data sources from Aadhar details. This in turn allows only the people who are eligible for voting to proceed with the formalities. The iris scanning is considered to be the most accurate than that of the fingerprint biometrics and hence forgery in elections can be completely eliminated. Hence the Aadhar data from the government is compared with that of the person's identity and once if it gets matched, the details such as age, address proof etc., are checked and only if the person is eligible, he/she will be allowed to vote.

Keywords--- *Electronic Voting machine, Iris Scanner, Aadhar detail.*

I. INTRODUCTION

The voting system in India has seen quite a lot of improvements from polling methods in ballot paper followed by various confidential methods. Starting from the counselor election in local panchayat to that of the Prime Minister election every Indian Citizen who are above the age of eighteen by the norms of "Universal Adult Franchise" must elect their leaders. However forgery in electoral identity card continue to be a greatest crisis from the time of independence. The development of the Electronic Voting Machine is found to be one of the greatest achievement in advancement of science over the Electoral phase in India. Even then the forgery in printing and use of voter's id continues. The advent of Aadhar in recent times paves a platform for eliminating these forgery. The cumulative details stored under every individual can be accessed from one and other. The retinal scan of every individual citizen is available in the government data. This forms to be the basic platform for the development of this idea. The Electronic Voting Machine is interfaced to the computer with a BM Iris scanner. Here once the scanning is done the data from the Aadhar peculiarities is accessed with the scanned image and the entire details of the individual are obtained in the computer. The details such as Date of Birth and Address proof are obtained from the government data. Once the requirements are fulfilled, the person is allowed to vote in the Electronic voting machine. If the conditions doesn't satisfy, the person cannot cast vote. And even if the vote is casted, It is programmed in such way not to calculate the vote. Thus the most secure and confidential form of electing system can be developed while this concept is implemented.

II. OBJECTIVES

The system is considered to be the most secure form of voting system. The Iris scanning is opted instead of fingerprint biometry because of the accuracy and low error generations. This system has the ability to completely avoid the forgery in development of duplicate voters and voter's identities.

This will access the information from UIDAI of the Indian Government to proceed with the development of the Iris scanned voting machine.

III. EXISTING SYSTEM

ELECTRONIC VOTING MACHINE

An EVM consists of two units, control unit and balloting unit. The two units are joined by a five-meter cable. Balloting unit facilitates voting by voter via labelled buttons while control unit controls the ballot units, stores voting counts and displays the results on 7 segment LED displays. The controller used in EVMs has its operating program etched permanently in silicon at the time of manufacturing by the manufacturer. No one (including the manufacturer) can change the program once the controller is manufactured.

EVMs are powered by an ordinary 6 volt alkaline battery manufactured by [Bharat Electronics Limited, Bangalore](#) and [Electronics Corporation of India Limited, Hyderabad](#). This design enables the use of EVMs throughout the country without interruptions because several parts of India do not have power supply and/or erratic power supply.

An EVM can record a maximum of 3840 votes and can cater to a maximum of 64 candidates. There is provision for 16 candidates in a single balloting unit and up to a maximum of 4 units can be connected in parallel. The conventional ballot paper/box method of polling is used if the number of candidates exceeds 64. It is not possible to vote more than once by pressing the button again and again. As soon as a particular button on the balloting unit is pressed, the vote is recorded for that particular candidate and the machine gets locked. Even if one presses that button further or any other button, no further vote will be recorded. This way the EVMs ensure the principle of "one person, one vote".

IV. ADVANTAGES OF ELECTRONIC VOTING SYSTEM:

Once the voting time is over, the system can immediately calculate the result of the election. It is faster than the traditional ballot counting method used in traditional voting system.

V. DISADVANTAGES OF ELECTRONIC VOTING SYSTEM:

The security issue is the main concern of the electronic voting system.

VI. PROPOSED SYSTEM

This system in turn adds an Iris scanner to get interfaced with that of the electronic voting machine via a computer loaded with the Aadhar details from the UIDAI. The comparison of data is done using the regression algorithms by using the Raspberry pi. The raspberry pi is used here in order to implement the regression algorithms from the details of the UIDAI as an intermediate to compare the data.

VII. DESIGN SPECIFICATIONS

The structure of this device consists of these following components

A. 3M CONGENT HIGH SPEED DUAL IRIS SCANNER:

Iris recognition is an automated method of biometric identification that uses mathematical pattern-recognition techniques on video images of one or both of the irises of an individual's eyes, whose complex patterns are unique, stable, and can be seen from some distance.

3M™ Cogent CIS 202 Dual Iris Capture Scanner offers a robust yet low-cost solution for rapid and simultaneous iris capture in less than two seconds. This USB-powered scanner enables users to safely capture high resolution iris images, while eliminating intrusive capture position or user discomfort. Compliant with NIST SAP level 40, CIS 202 has near infrared illuminators, LED lighting, and built-in spectral imaging sensitivity control to capture light in the range of 700-900 nanometers. CIS 202 image output meets industry interchange format specifications by supporting ANSI NIST Type-17 records, with raw images conformant to ISO 19794-6 rectilinear image standards.

Enclosed in a durable and adjustable casing that meets IP 54 rating, CIS 202's sturdy, hand-friendly goggle design is ideal for biometric application such as civil registry enrollment, biometric document issuance, applicant identification, border control, and inmate release management.



B. ELECTRONIC VOTING MACHINE:

Electronic Voting Machines ("EVM") are being used in Indian General and State Elections to implement electronic voting in part from 1999 elections and recently in 2017 state elections held in five states across India. EVMs have replaced paper ballots in local, state and general (parliamentary) elections

in India. There were earlier claims regarding EVMs' security which have not been proved. After rulings of Delhi High Court, Supreme Court and demands from various political parties, Election Commission decided to introduce EVMs with voter-verified paper audit trail (VVPAT) system. The VVPAT system was introduced in 8 of 543 parliamentary constituencies as a pilot project in Indian general election, 2014.



C. COMPUTER WITH USB INTERFACE TO IRIS SCANNER:

The computer is provided with that of a USB cable that is interfaced with that of the Iris scanner. Thus the scanned image gets loaded to that of the computer memory. This scanned image is then compared with the entire data and the true identity of the person along with the peculiar details are obtained.



D. SOFTWARE:

Use footnotes sparingly (or not at all) and place them at the bottom of the column on the page on which they are referenced. Use Times 8-point type, single-spaced.

To help your readers, avoid using footnotes altogether and include necessary peripheral observations in the text (within parentheses, if you prefer, as in this sentence).

Number footnotes separately from reference numbers, and in superscripts. Do not put footnotes in the reference list. Use letters for table footnotes.

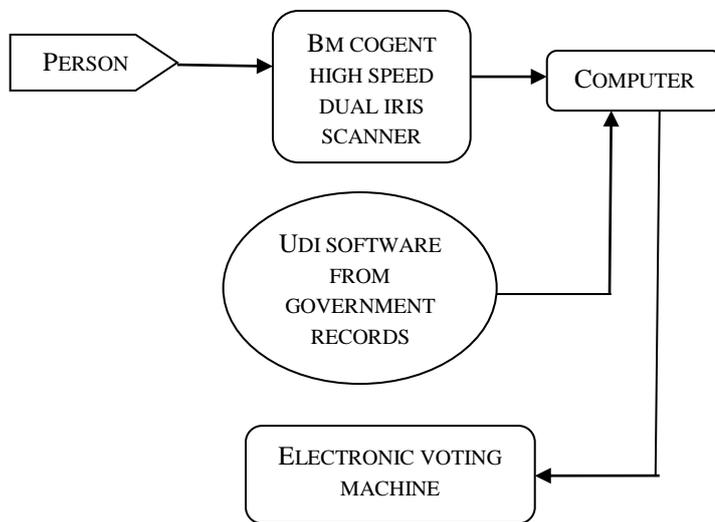
VIII. METHODOLOGY AND WORKING:

This provides all possible methods of picturing the iris scan. Once the Iris scan is fed to the UID software, compares with that of the entire data from the Aadhar source and obtains the individual's identity.

Once the identity is found out, The age and proofs are cross checked. Thus only when the condition for voting is satisfied, the person can vote and the vote would be considered.

Else the casted vote cannot be counted. This is developed by a simple linux or C programming using If and else conditions.

IX. BLOCK DIAGRAM OF IRIS SCANNED ELECTRONIC VOTING MACHINE



DISCUSSIONS

The iris is unique. However, there are so many factors that go into the formation of these textures (the iris) that the chance

of false matches for either is extremely low. Even genetically identical individuals the same have completely independent iris textures. There is no need for the person being identified to touch any equipment that has recently been touched by a stranger, thereby eliminating an objection that has been raised in some cultures against fingerprint scanners, where a finger has to touch a surface, or retinal scanning, where the eye must be brought very close to an eyepiece (like looking into a microscope).

CONCLUSION

By application of this project into real time we can avoid malfunctions, Time maintenance system, Automatic counting of votes. It is also insensitive to variations in the lighting conditions and noise levels. It specifically uses the zero crossings of the wavelet transform of the unique features obtained from the grey-level profiles of the iris. It uses only a few selected intermediate resolution levels for matching, thus making it computationally efficient and less sensitive to noise and quantization errors. Iris detection in the application works to a very high degree of accuracy in every seen case. The pupil has a fairly unique shade in comparison to the rest of the eye and its surrounding area; this enables an intelligent threshold to be carried out with information from the image histogram to isolate the pupil. This, unfortunately, is not a property shared by the iris, making it significantly more difficult to isolate than the pupil. Day by day the population is increasing enormously which in turns demands the improvement in the voting system. The primary goal of every voting system is to increase the participation of the civic. Undoubtedly the above discussed voting techniques are exceptionally good, but there is always scope for further improvement.

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