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A Review on Aadhaar Based Voting System for Roaming e-Voters

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ABSTRACT

In every country Election is a basic process of democracy, which allows people to show their opinions by selecting their candidate. This paper describes overview of various research done to improve the security, privacy of the e-voting technology. To make such kind of system, every system consists of voter authentication and vote casting. Now days using of biometric based security level system become faster and secure. In India, government is collecting biometric information of every person and providing them, a unique twelve-digit number called Aadhaar Number. Hence, using of Aadhaar number and its biometric database voter verification can be made, after verification voting can be perform.

Keywords — Aadhaar, Database, Fingerprint, E-Voting, Election, Bio-Metric

I. INTRODUCTION

The online voting system is contemplated as an interesting point in data security research. The online voting system is a way that helps open to select their representatives and express their preferences for how they will be governed.

In the old system of voting, votes are cast by ballot paper. After entering the polling station, the officer checks identity confirmation (election ID card) of voters and allocated a ballot paper to a voter. The voter votes by denoting the ballot paper with candidates' names and images by rubber stamp, inside a voting compartment in the polling station. Then the voter creases the ballot paper and inserts it in a ballot box. This is a long, time-expending process and very much prone to errors. This circumstance continued till the election scene was completely changed by EVM. No more ballot paper, ballot boxes, stepping, etc. this condensed into a simple box called ballot unit of the EVM.

From 1998, Ballot boxes were replaced by EVM in India.EVM is capable of sparing considerable printing stationery and transport of large volumes of electoral material. It is easy to move, store, and keep up. A Control Unit and a Balloting Unit, these two units is a piece of EVM which is connected by a five-meter cable. The Control Unit is located with the Polling Officer and therefore the Balloting Unit is located inside the voting compartment. Instead of providing a ballot paper, the Polling Officer can press the Ballot Button. Rather than giving a ballot paper, the Polling Officer will press the ballot Button. This will enable the voter to make his choice by means of pressing the blue button on the voting Unit against the candidate and image of his choice. Election Commission of India introduced a new equipment notwithstanding the EVM called VVPAT (Voter Verified Paper Audit Trail) which gives feedback to the voters to check whether

his/her vote was casted correctly or not. When the last voter cast his/her vote, the polling officer press the close button after which the EVMs does not record any votes .upon the arrival of checking results will be displayed by pressing the result button.

Normally, the belief of the election process is the most extreme significant [1]. The election process has solid media coverage, especially if something goes wrong. This system will increase the level of security and furthermore the trust of voters. The problems of Maoist affected places for voting have been addressed in [2] while [3] describes the genesis of Maoist violence and showed that open needs a more secure method for making their choice. Online voting system definition given in [4] states that Online voting systems offer advantages compared to other voting processes. An Online voting system might be involved in any of a number of steps in the setup, voting, collecting, dispersing and tallying of polling forms.

The question of who gets to include your vote was addressed in [5] while in [6] the voting security has been analyzed. The same problem has likewise been addressed in [7] more uniquely to ponder over its perception and reality. The question of confidence in electronic voting has been discussed in [8]. It is difficult to make the voting system reliable simply because it has high-security requirements: confidentiality and integrity. Confidentiality means all voters get assured about the security of votes and prevent the selling of votes. Integrity means the assurance of election results and the votes are counted correctly. Integrity is easy to get through an open display of support, however, this dissipates confidentiality and confidentiality come from the secret polling forms, yet this bombs the integrity.

In India, the government started collecting biometric data of people in general and giving them a unique identification number called Aadhaar number. Hence, the database of UIDAI can be used to authenticate the voter.

When a person enters, the authentication should be possible utilizing finger vein sensing with the help of the fingerprint module. In the event that fingerprint matched, it enables the authenticated voters to vote on the electronic voting machine.

II. LITERATURE REVIEW

The creator has discussed keeping up the centralized database of a voter as indicated by their consistency. The centralized database can likewise be updated online by having each polling station keep up its neighborhood database and update the centralized database after completion of the election process. This paper additionally means to provide RFID, Biometric Security, and Secret Pin Authentication Phase. When voter performs vote throwing the Boolean status of that voter marked true, with the goal that the same voter can't vote for the second time. An RFID card will be provided to each voter. [9] But to provide RFID based Voter card to every citizen will become exorbitant.

In this investigation [10] the creator has proposed a secure on-line e-voting system that uses UIDAI or Aadhaar information as to its backend. The system guarantee authentication by coordinating fingerprint and eligibility is checked by calculative the age of the elector so creating the prevailing pick cards redundant. They need to project associate integration of the CIDR thereupon of e-voting mechanism to shape e-voting in India a reality.

Client-Server web-enabled software design is employed during this project. A user interface accepts voters Aadhaar number, provides an associate interface to vote and shows affirmation, standing and

error messages. This technique needs a keen data measure and a rapid web alliance for operation. [10] To run this software computer is required, however, we can't ensure that every person having the knowledge of taking care of computers. Resulting the voters may become a casualty of social engineering.

In this paper [11] creator has discussed to use the fingerprint or iris information of the Aadhaar Card to use in the voting system. The advantage of this project is if a heavy drinker person enters into polling corner buzzer will alert authorize persons or constable who is in the election obligation. In this project, for enrolling purposes, enroll button is provided. In the event, that the citizen is not enrolled his vote on the data of a small-scale controller, Vote will not be cast. In this system, LCD is interfaced with the same controller to show the result of the election after pressing 'Result Button'. Other hardware and a device like Alcoholic and Gas detector, Metal detector, fingerprint module, and RFID label reader is connected with the same miniaturized scale controller.

In this system RFID card is used for voter identification. RFID label will contain its unique Number. Be that as it may, to provide RFID cards to every person (citizen) will become a lot of expensive. What's more, no arrangement is given to get secure access to the administrator, for getting conclusive outcomes.

In this paper [12] creator has discussed that voter identification is required during two phases of the electoral process: first for voter registration so as to establish the privilege to vote and afterward. At balloting time, to permit a voter to exercise their entitlement to vote by affirming if the person satisfies every one of the necessities required to vote (authentication). Security is a significant key to any voting system. In this method, the details of the voter will get from the Aadhaar card database. It was a newly developed database. By utilizing this data they took the voter's information are hang on inside the PC. All through election, they use finger-sensing module for fingerprint access. As indicated by their decision, it is very hard to design an ideal e-voting system, which permits perfect security and protection with no compromise. Their future work is to interconnect all the polling stations with internet security.

This paper [13] describes an online voting system for Indian Elections. In this, all users should sign in by Aadhaar card number and secret key. The high-security secret word is confirmed before the vote accepted in principle database of ECI. In this project, the database of Aadhaar will be stored in CPU, after coordinating finger voter needs to press button dedicated to any ideological group. After that, it will print a token, which contains party name and time. Voting throwing is happening offline mode.

III. PROPOSED SYSTEM

Here we are designing a voting system using biometrics, which will give better system security and vote casting become less time-consuming process, and it will provide better results. Voter can cast vote remotely from anywhere in the country with the help of an internet. Voters must have internet connection on their device to cast vote from remote place and voter required figure print scanner. In biometrics, we have use fingerprint, Finger print of voter will fetch by finger print scanner, which will be then forwarded to server for further Aadhaar verification. Voter is allowed to cast his /her vote after successful verification with finger print matching thus providing secured biometrics voting system based on Aadhaar Verification. We also used fingerprint-matching algorithm, which is fast and more accurate compare to other existing algorithm.

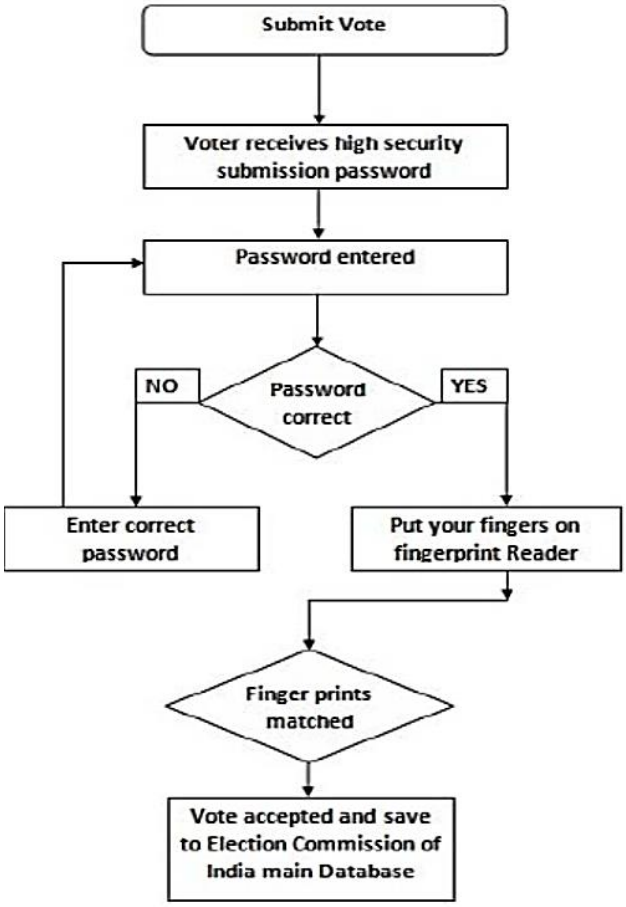

Figure 1. Security Check Process in Voting System

IV. CONCLUSIONS

We have proposed another key administration worldview to empower send-and-leave communicates to remote agreeable groups without depending on a completely confided in outsider. This proposed system has proved to be secure in the standard model. An exhaustive multifaceted nature investigation shows that our proposition is additionally effective as far as calculation and correspondence. These highlights render our plan a promising answer for group-arranged correspondence with get to control in the dynamic settings normal in different kinds of specially appointed and eminent systems.

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