Automated Election System

Hipolito, Jovellano, Pachico

Abstract

The Philippines has been adopting the Automated Election System after years of adhering and relying on the Manual Voting System. It has been proven that the process became more efficient and generates results in a lesser time frame. However, complications are still evident in present time. For instance, electoral fraud still continues to remain through the existence of memory cards especially for the counting/transmission of election returns. There are many factors to consider in determining the causes of result manipulation that includes the humans accessing the system extensively. A physical object like the memory card is easy to exploit though many seem to think that transmitting/counting the results using memory cards are reliable and dependable. This study aims to produce a new system in which transmitting and counting of the votes does not require physical contact with other entities besides the system itself.

INTRODUCTION

Background of the Problem

How does the current system count the votes? How does electoral fraud happen in the counting and transmission of the AES? What could be the possible solutions to reduce these issues?

After years of having a manual voting system, the Philippines have finally adopted an Automated Election System (AES) in 2010. This was mandated by Republic Act No. 9369 which is the Amended Elections Automated Law. The law stated that there would be paper-based election system defined as “a type of automated election system that uses paper ballots, records, and counts votes, tabulates, consolidates, canvases, and transmits electronically the results of the votes cont” (Angkaya, 2011).

By standards, the new technology should be significantly more accurate and reliable for the voters; however, there were still some problems that might prove the acquired AES otherwise. For instance, the current automated election system with SMARTMATIC uses compact flash (CF) cards for the configuration of the Precinct Count Optical Scan machines in different provinces. These CF cards are pre-loaded with the precinct specific data. Then the same CF cards will also be the ones to store the data of the votes of the people. To look at it clearly, the cards are pre-loaded and will also be the ones to store a very important shit for the elections. This situation gives cheater candidates an easy time to manipulate the data in the system because it can definitely be intercepted. (Kindly fix this, mikha. Add the rappler article here about how the AES werq + possible issues sa baba nung article (with the read only shenanigans statement sa rappler article as well)). Furthermore, the current voting system does not incorporate digital signature when transmitting the election returns from precincts to canvassers even if it is stated in the law. \*insert comelec law here\* This is one of the reasons why it is easy for wrongdoers to ambush and manipulate the elections. For example, the Mindanao incidence where armed men raided a local voting precinct and brought a PCOS machine with them in a hotel to sabotage the election by inserting their own filled ballots into the machine. Without the existence of a digital signature provided by an authenticated agency, the election return being transferred would still be considered as not reliable. (blahblah blah paki add yung gps and how it could also reduce the chance of cheating)

Statement of the Problem

How can the Philippine election system prevent electoral fraud specifically for the counting and transmission of the election returns?

Objectives

General

* To know the vital issues present in the counting and transmission of the votes
* To propose a system that would prevent electoral fraud in the counting and transmission of votes in the election system

Specific

* To develop a system that would transmit election returns without any human intervention (e.g. physical transportation of election returns)
* To design a database that would cater to the need of the proposed system

Significance of the Study

The findings of this research will benefit the following key players:

To the Filipino Citizens

This study will benefit the Filipino citizens for ensuring the security of the casted votes. Also, it would prevent malicious individuals from manipulating the votes. Although the nature of automation easily provoke fear to ignorance of using technology, this study will educate some of those users that still lack computer literacy foundation. Indeed education can bridge the existing gaps and even remove the unnecessary fear from automation. This will leave the citizens better equipped for the future of the Philippine automated election system.

To the COMELEC

This research would significantly contribute to the goal of the COMELEC to conduct a fair and transparent election. Considering the impact of the elections in the overall condition and future of the Philippines, it is important to make sure that the voters’ choice reflect the outcome of the election. To do that, the system should be able to prevent and mitigate electoral fraud while ensuring that the voters have casted their votes in a way that is convenient and voter-friendly. This study will aim to determine the most appropriate methods to achieve the kind of system that does not manipulate the vote of the people in any way through data gathering and research. In this manner, the people will be knowledgeable about how the system works and be informed and wise voters themselves.

To the Future Researchers

As the Philippines adjust to this kind of voting system, more and more developers would also contribute to the AES aspect of software development. In that case, the system that would be created can serve as a guide and inspiration for other developers who would want to pursue the prospect of automated election system too.

Scope and Limitation

The scope of the study would only be limited with the issues and possible improvements that can be done for the counting and transmission part of the Automated Election System.

REVIEW OF RELATED LITERATURE

Related Literature

How does the Automated Election System works: <http://www.rappler.com/newsbreak/iq/91663-philippine-automated-election-sytem-explained>

Digital signature: <http://romeocayabyab.com/controversial-2010-philippine-automated-elections-revisited/> plus i.gov.ph about PKI

Secret servers: [www.manilatimes.net/smartmatic-admits-using-unofficial-servers/275442/](http://www.manilatimes.net/smartmatic-admits-using-unofficial-servers/275442/)

Related Study