

# Advanced Electronic Voting Machine

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## ABSTRACT

Governments should be more responsive to the will of the citizens. Good quality of democratic government is formed by voting. For a variety of reasons, voters are not able to attend voting booths physically, but need to vote remotely, for example, from home, work place and abroad. Electronic voting systems have the potential to improve traditional voting procedures by providing added convenience and flexibility to the voter. Remote voting procedure is an answer to various problems which are the cause of very low voting percentage. Global System for Mobile communications is the most widely used mobile networking standard. GSM users represent a large user potential, not just for mobile telephony, but also for other mobile applications that exploit the matured GSM infrastructure. In this paper, an advanced electronic voting machine using GSM mobile technology is presented. By integrating an electronic voting machine with the GSM infrastructure, we are able to exploit existing GSM authentication mechanisms and provide enhanced voter authentication and mobility while maintaining the voter privacy. Along with this we are also adding the feature of multiple voting.

**Keywords**—Negative voting, Global System for Mobile Communication, Loksabha, Rajya Sabha, Governance, democracy,

## INTRODUCTION

Democracy is being considered the best form of all types of governance and voting is a democratic instrument to achieve democracy. "Majority is always right" is the guiding principle of this form of governance. In today's world where big wars are being fought in name to establish democratic rules in all part of globe, every organization national or international talk of its democratic structures to prove themselves to be true progressive. In this scenario democracy has become a way to one's credential. The simple way to find one's democratic value is the number of members voting for them to govern or voting percentage. Every democratic system is powered by participation of its members, which are the real soul of democracy. The percentage of members' participation is directly proportional to the quality of particular democratic unit.

In its quest for modernization, India has preserved its ancient civilization and never lost sight of the ideals that gave her strength through countless centuries. Science and technology provide the tools for improving the lot of its people. But the nation of over one billion continues to live with some of its traditions that go back 4,000 years, and more. In a world where nations, big and small, are breaking into micro entities, often with disastrous consequences, India has demonstrated its inherent resilience. This strength comes from its composite culture which is very necessary for a truly vibrant democracy.

With a billion people, the Republic of India is the world's largest democracy. India modeled its government on the British parliamentary system, with a healthy dose of influences from the United States and the rest of Europe. India is run by a parliament made up of two houses. These two houses are called the LOK SABHA, or "House of the People," and the RAJYA SABHA, or "Council of States." Of the two, the Lok Sabha holds more power, but the two houses work together to make the laws of the country.

The parliament is located in India's capital, New Delhi. In just over 60 years, India has gone from being a British colony to being a functioning, independent democracy. It still faces problems. Overpopulation, poverty, and internal strife threaten Indian stability from time to time. Despite these concerns though, the world's largest democracy has survived the past half-century without a government collapse or military takeover. But people's faith has received a jolt owing to ever increasing communalism, casteism, enmity and polluted politics.

The largest democracy of the world is passing through a most difficult turmoil because of the power hungry politicians in connivance with the money and muscle power. The social stratification inherent in the religion persists to this day. Most politicians come from the upper castes, although there has been gradual change in recent years. Still, most people continue to work in the jobs assigned to their castes jobs their distant ancestors also worked.

One result of this stratification is that the wealthiest Indians are some of the richest people in the world — owning palaces, fleets of luxury cars, jewels, and very big bank accounts. At the same time, the vast majority of Indians suffer extreme poverty. Even finding enough food to get from one day to the next can be a struggle.

Democracy could not last long if politics is devoid of ideology. Time had come to ponder over how to save the hard-earned independence by the politicians who purchased votes in lieu of money.

We should imbibe lessons from invaluable contribution and sacrifice for independence by our great leaders like Mahatma Gandhi, Jawaharlal Nehru, Subhash Chandra Bose and Bhagat Singh. There should be conviction

among common people that nation and motherland's welfare should be the utmost priority and those who behaved against it should be considered as traitor.

To save this great democracy of the world both the Parliament and Election Commission of India have to take urgent, immediate and hard tests to deal with the muscle and money power from the electoral process in the country.

As per the 1969 act, in section “49 O”, there is a system in our constitution according to which a person can go to the polling booth, confirm his identity, get his finger marked and convey the presiding election officer that he doesn't want to vote anyone. This feature is available but has never been disclosed. This is called “49-O”. If “49-O” votes are more than that of the winning candidate then that polling will be cancelled and will have to be re-pollled. Not only that, but the candidature of the contestants will be removed and they cannot contest the re-polling, since people had already expressed their decision on them. This would bring

fear into parties and hence look for genuine candidates for their parties for election. This would change the way of our whole political system. It is seemingly surprising why the election commission has not revealed such a feature to the public. This seems to be a wonderful weapon against corrupt parties in India. We, the people of India, can really use this power to save our nation. We can use our voting right for a better INDIA.

Voting is an important tool to collect and reflect people's opinions. Voting is conducted in centralized or distributed places called voting booths. Voters go to voting booths and cast their votes under the supervision of authorized persons. The votes are then counted manually once the election has finished. With the rapid development of computer technology and cryptographic methods, electronic voting systems can be employed that replace the inefficient and most importantly error-prone human component.

To increase the efficiency and accuracy of voting procedures, computerized voting systems were developed to help collecting and counting the votes. These include Lever Voting Machines, Punched Cards for Voting, Optical Mark-Sense Scanners and Direct Recording Electronic (DRE) voting systems. Today, the most common way for remote voting is postal voting, where voters cast their votes by post. However, it lacks proper authentication and involves a time-consuming procedure.

Because of the inherited security vulnerabilities of the Internet and computerised systems in general, Internet voting cannot be implemented. Now in this paper, we are suggesting a remote voting procedure which is easy, transparent, and most secure that can increase the voting percentage to a large extent to improve the quality of democracy. We endeavor to improve mobility and address security problems of remote voting procedures and systems. We are presenting an electronic voting machine using GSM.

The well-designed GSM authentication infrastructure is used to improve mobility and security of mobile voting procedures. The cryptographic protocol of our GSM mobile voting scheme is based on the already existing work. In our proposed scheme, voters are authenticated by their GSM mobile operators, and the votes are sent using GSM wireless communication. Voters and their votes cannot be linked and votes remain secret until the final counting.

Negative voting cannot go with the free and fair electoral process. The secrecy of vote is lost when an elector asks for the mandatory form for negative voting. If we wish to continue the system of negative voting we should include negative voting as a candidate or a contestant. This way the secrecy of voting including that of negative voting would be maintained.

## BLOCK DIAGRAM

As shown in figure 1 is the proposed block diagram of the advanced voting machine.

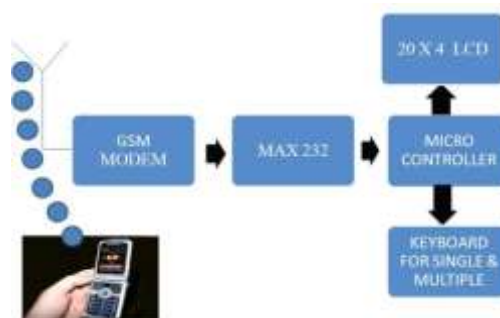


Figure 1. Block Diagram

## BLOCK DIAGRAM DESCRIPTION:

### GSM Modem:

The GSM modem delivers all the power of instant wireless connectivity to multiple applications. Because the modem is fully type approved, it can dramatically speed up the time to market with SMS features. Housed in a rugged plastic extrusion casing with good aesthetics and surface finish to withstand toughest field environments. The open interfaces and AT commands can embed and run the applications very efficiently. With its proven technology, the modem can be relied on for enduring and dependable performance.

### MAX232:

The MAX232 is a dual driver/receiver that includes a capacitive voltage generator to supply RS-232 voltage levels from a single 5-V supply. Each receiver converts RS-232 inputs to 5-V TTL/CMOS levels. These receivers have a typical threshold of 1.3 V and a typical hysteresis of 0.5 V, and can accept  $\pm 30$ -V inputs. Each driver converts TTL/CMOS input levels into RS-232 levels. The driver, receiver, and voltage-generator functions are available as cells in the Texas Instruments Lin ASIC library.

### MICROCONTROLLER:

- 80C51 Central Processing Unit
- On-chip Flash Program Memory with In- System Programming (ISP) and In- Application Programming (IAP) capability.
- Boot ROM contains low level Flash programming routines for downloading via the UART
- Can be programmed by the end-user application (IAP).
- Parallel programming with 87C51 compatible Hardware interface to programmer.

### SPECIFICATIONS

- Advanced electronic voting system consist of two modes:-
- General voting through manual as well as GSM technology
- Multiple voting
- It has got facility of "Negative Voting" under section O-49.
- By using AEVM one can give vote through cell phones. No need to present physically.
- Password & ID is given to every voter who registered in the Election Office.

### CONCLUSION

In our proposed Advance Electronic Voting Machine, we have focused for increase in the percentage of voting which will bring the best form of the governance by exploiting the existing technology. This is going to play a very important role for the formation of best society which was the vision of our great freedom fighters.

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