ATM ROBBERY PREVENTION USING ADVANCED SECURITY SYSTEM

[1]DRUVA KUMAR S, [2] MANJU S N, [3] RAVINDRA,[4] SHARAN BASAPPA,[5] KIRAN Y.

[1]Asst. Professor, [2]B.E Student, [3]B.E Student, [4]B.E Student, [5]B.E Student.

ELECTRONICS AND COMMUNICATION

DAYANAND SAGAR COLLEGE OF ENGINEERING.Banglore,India.

Abstract : - Our proposed system will provide advanced ATM theft security system. The afflatus for our project is gained from the news and issues which are happening in our daily life. Now a day's larceny or robbery of ATM is superabundantly increased so due to that we trying to disclose remedy for it. Keeping the technique of 'keep it simple' in our mind, we recommended 3-layered advanced ATM theft security system for ATM machine, starting from sensors at the entrance to GPS technology in the ATM machine. Followed by the smart unauthorized access detection and informed to the nearest police station and the Bank Authority.

Index terms–Introduction, Objective, Literature Overview, Working Overview, Hardware components, Software, Advantages, Limitations, Conclusion, Reference.

I. INTRODUCTION

We belongs to the edge of digitized and smart world. People are getting smarter day by day with the help of new technology, new innovations. Main reason behind the up-gradation of new technologies are nothing but to overcome the existing problems. Economic growth of world makes the life smarter and better as compared to previous lifestyle. A smart step towards economy is the introduction of Automated teller machine (ATM), for faster and easier money transfer. But a group of people do malpractices over this ATM system to put people, organization or bank into a millions pounds of loses. This system proposed in our project, maintain the entry of a single card holder at a time with the help of auto sensor detection. With the help accelerometer any mechanical moment can be detect, with the GSM AND GPS technology used in the ATM machine. If any types of unexpected events occurred, nearest police station and the authority will be informed automatically.

II. OBJECTIVES

1. To overcome the ATM theft.
2. Restrict the entry of any unauthorized person.
3. Provide more security.
4. Formal step towards smart city.

III. LITERATURE OVERVIEW

In 1975, Korea exchange bank introduced the first ATM, followed by Shinhan Bank in 1982.According to scervy 3.5 milion ATM users are present in our world

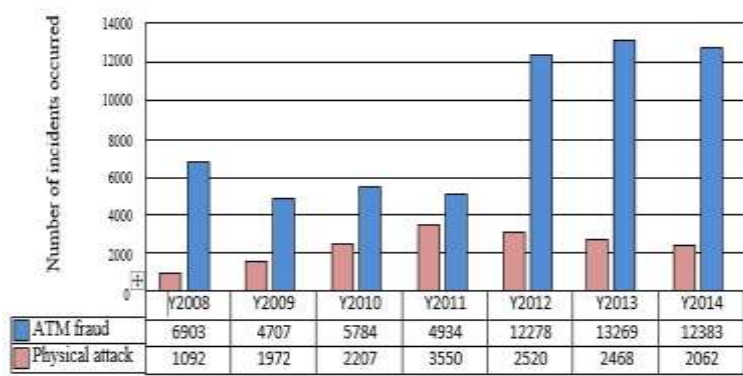|	Y2008	Y2009	Y2010	Y2011	Y2012	Y2013	Y2014
ATM fraud	6903	4707	5784	4934	12278	13269	12383
Physical attack	1092	1972	2207	3550	2520	2468	2062

Figure 1: ATM robbery in per year

Currently, the ATM machines are not secured that much. Those are only have the card swapping facility at the entrance at the door. But this facility doesn't control the number of users entered at a particular instance. Number of ATMs are also covered under this system are also very few. Another secured system is to place accelerometer sensor into the ATM machine. But if the complete machine is stolen then it has not that much physical use. For that situation we need a tracking device on that machine, which is not in use yet. According to the survey ATM robbery increase in last few years. This project will help to fix all this vital issues with the help of some advanced sensors and global positioning system (GPS).

IV. WORKING OVERVIEW

In this project mainly 3 applications are there,
1. Finger print based ATM door opening.

2. Tilt based ATM location transmission.

3. Push button-based buzzer and location transmission.

In order to achieve first application, finger print sensor is used, if the finger print is authorised, the door will be opened and closed and after some time (for transaction) once again the door will be opened and closed. Here for this application DC Motor is used. For second application, tilt sensor is used, if someone is trying to displacement of ATM, the sensor will be get activated and an alert message with location will be sent to the police station. For third application, push button is used, if someone is trying to tamper the ATM, the buzzer will be activated to indicate to the peon, and door will be locked and an alert message with location will be sent to the police station
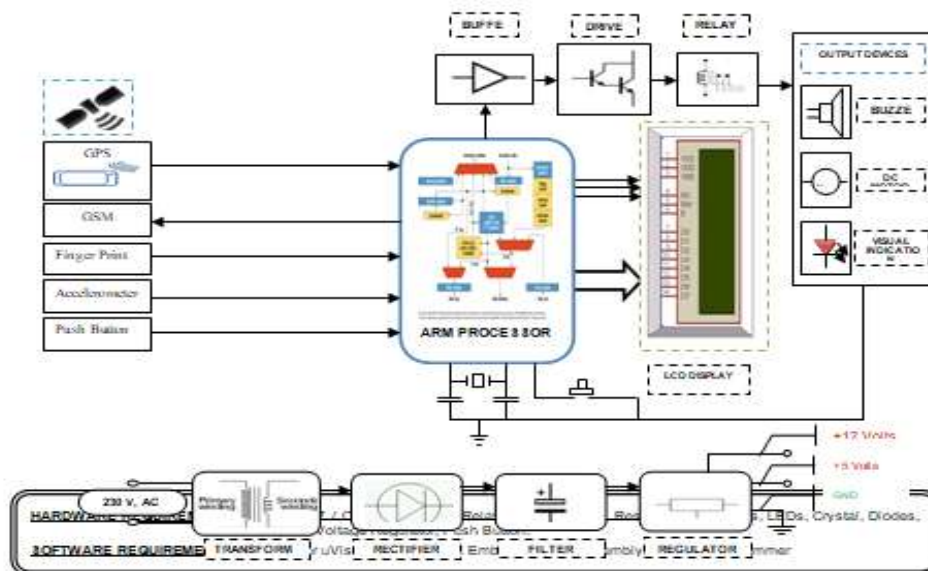
V. HARDWARE

1.Power supply unit: This section needs two voltages viz., +12 V & +5 V, as working voltages. Hence specially designed power supply is constructed to get regulated power supplies.

2.Buffers: Buffers do not affect the logical state of a digital signal (i.e. a logic 1 input results in a logic 1 output whereas logic 0 input results in a logic 0 output). Buffers are normally used to provide extra current drive at the output but can also be used to regularize the logic present at an interface.

3.Drivers: This section is used to drive the relay where the output is complement of input which is applied to the drive but current will be amplified.

4.Relays: It is a electromagnetic device which is used to drive the load connected across the relay and the o/p of relay can be connected to controller or load for further processing.

5.DC Motor: A DC motor relies on the fact that like magnet poles repels and unlike magnetic poles attracts each other. A coil of wire with a current running through it generates an electromagnetic field aligned with the center of the coil. By switching the current on or off in a coil its magnetic field can be switched on or off or by switching the direction of the current in the coil the direction of the generated magnetic field can be switched 180°.

6.Indicator: This stage provides visual indication of which relay is actuated and deactivated, by glowing respective   LED or Buzzer.

7.LCD: A liquid-crystal display (LCD) is a flat-panel display or other electronically modulated optical device that uses the light-modulating properties of liquid crystals. Liquid crystals do not emit light directly, instead using a backlight or reflector to produce images in colour or monochrome.

8.DC Motor: A DC motor is any of a class of rotary electrical machines that converts direct current electrical energy into mechanical energy. The most common types rely on the forces produced by magnetic fields.

9.Buzzer: A buzzer or beeper is an audio signalling device, which may be mechanical, electromechanical, or piezoelectric.

10.ARM 7-LPC 2148:The heart of the system is microcontroller which will access the data . In our project ARM7 is used. The ARM7 which we used for our project is LPC2148 (PHILLIPS) ARM7 is high-performance, low-cost, low power consumption RISC processor

11.Fingerprint Sensor: A Fingerprint sensor is an electronic device used to capture a digital image of the fingerprint pattern. The captured image is called a live scan. This live scan is to create a biometric template (a collection of extracted features) which is stored and used for matching. This is an overview of some of the more commonly used fingerprint sensor technologies.

VI. SOFTWARE

1. Embedded C: Embedded C is a set of language extensions for the C programming language by the C Standards Committee to address commonality issues that exist between C extensions for different embedded systems. Historically, embedded C programming requires nonstandard extensions to the C language in order to support exotic features such as fixed-point arithmetic, multiple distinct memory banks, and basic I/O operations.

2. Kiel M Vision: μVision IDE combines project management, run-time environment, build facilities, source code editing, and program debugging in a single powerful environment. μVision is easy-to-use and accelerates your embedded software development. μVision supports multiple screens and allows you to create individual window layouts anywhere on the visual surface.

VII. ADVANTAGES

1. This project is fully automatic and does not require any manual operation.
2. Provides very accurate data via GPS system.
3. Information system at complicated places can be made automatic.
4. Improving the capacity of the system helps to cover large areas.
5. Provides complete ATM theft security.
6. Geological location will always be traced of an ATM machine.

VIII. LIMITATIONS

1. Operative and maintenance is cost effective.
2. Sensor must be robust.
3. This advanced secured system may be costly as compared to existing.
4. Making of ATM machine will be little bit complex in structure.

IX. CONCLUSION

Our suggested system will be very much effective to reduce the ATM robbery. This secured system will also help the higher authority to take necessary steps before happening of a theft or unauthorized access by any trespasser. Limitation of this proposed system may be a little bit costly as compared to current ATMs, but when it's all about someone's money, potentiality is more of this system. This advanced ATM robbery prevention system will provide more secured, better for the human being.

X. REFERENCE

[1]https://en.wikipedia.org/wiki/Automated_teller_machi ne.
[2]. M. Ajaykumar&N. BharathKumar"Anti-Theft ATM.
[3]Machine Using Vibration Detection Sensor", December2013.
[4]. Sivakumar T, GajjalaAskok& k. Sai completed her diploma with first-class degree.

IX. AUTHOR PROFILE

• AsstProf Dhruva Kumar is assistant professor at Dayananda Sagar College of engineering in Electronics and Communication Department.
• Manju S Nis final year student of Dayananda Sagar College of Engineering.
• Ravindra S is final year student of Dayananda Sagar College of Engineering.
• Sharanabasappa is final year student of Dayananda Sagar College of Engineering.
• Kiran y is the final year Student of Dayananda Sagar College of Engineering