UNUSUAL EVENT DETECTION AND ENHANCING THE SECURITY SYSTEM

[1]**Sharon Sweeti , **[2]**Thasleema Banu, **[3]**Rajapriya, **[4]**Sharmila, **[5]**Prabavathy**

[1], Assistant Professor, Department of ECE, Kings Engineering College,
[2,3,4,5] UG Scholars, Department of ECE, Kings Engineering College,
[1] sharon_sweeti@yahoo.co.in ,[2]thaslimaazmi@gmail.com,[3]priyaraj21rp@gmail.com,
[4]sharmisara86@gmail.com, [5]prabhavathy6061@gmail.com

Abstract—**Nowadays ATM is main source for people for getting money from anywhere. Also ATM card theft and ATM money robbery occurs at the same time. Here we introduce a system for protecting such type of problems. By using this system, one-time password will be generated every   time when you insert your ATM card in ATM machine. And some sensors like vibration and temperature sensors are placed for detecting the theft in ATM. This system avoids money robbery in ATM machine.**

Keywords—**OTP, ATM security, Vibration and Temperature Sensors, Door Lock, Immediate Information.**

I. INTRODUCTION

In ATM Password will be constant, we can change it sometimes, but not regularly. If someone knows our password, they can take our card and access easily. If the person enters the password wrongly for several times, the card will be blocked. If someone damages the ATM by welding machines or some other tools for robbery it indicates only alarm sound.ATM door will be normally opened. No door security is implemented here. It could contain the disadvantage as 1. Poor Security system. 2.Due to constantpasswords, unauthorized person can access our ATM card 3.Only later the card holder will come to know that their money is theft. These are the disadvantages that makes the security system of the ATM very poor. It is very difficult to improve the security system of ATM in normal low resolution camera which is fixed in the ATM. In this case, the information of the unusual event that occurs in the ATM center will not be immediately sent to the authorized person. If any unusual event occurs in the ATM center, we can't find out the event immediately. If any theft occurs in the ATM money, the door of the ATM center will not close automatically. So the thief easily can escape from the ATM center. Hence the security of the ATM is very poor now-a-days. Another way of robbery of ATM money is done by using welding machine. Now-a-days we can't identify or detect the theft in ATM using welding machine because there is no sensor to detect the heat. Another way of robbery of ATM money is by breakage of ATM machine. In this case, we can't find the theft occur in the ATM because there is no sensor to detect the vibration of the ATM machine.

II.RELATED WORKS

If the ATM pin number is entered wrongly thrice, the ATM card get hold inside the ATM machine. In order to avoid this situation, a system is introduced such that the ATM card is inserted and taken back immediately so that the card does not held by the machine even if the pin number of the ATM card is wrong but in this case the card gets blocked. At present, the password used by the user is constant and the system used for user's convenience is that they can change the password as per their wish. This can be done in the ATM machine itself. The ATM theft is detected with the use of the cameras fixed in the ATM center. This existing system enhances the low resolution(LR) video by super resolution(SR) techniques. But these methods require high computational cost. This cost further increases if we are dealing with event detection.

III. PROPOSED SYSTEM

Our proposed technique is used for Detecting unusual events such as ATM card theft and breakage of ATM machine. These techniques will also provide immediate information to the authorized person and also to the respective banks. It provides the security for ATM user by generating one-time password. This system is also used to easily find out the ATM theft.

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BLOCK DIAGRAM

Whenever the user inserts the ATM card in the ATM machine, the RFID Reader reads the bar code in the respective card and generates the one-time password(OTP) to the respective card holder's number through the GSM.
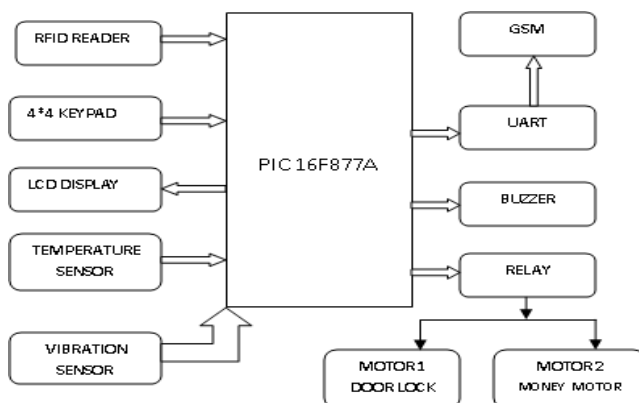
The above block diagram explains the proposed system.

UART acts as the serial communication between the microprocessor and GSM. Christo Ananth et al. [3] discussed about a system, GSM based AMR has low infrastructure cost and it reduces man power. The system is fully automatic, hence the probability of error is reduced. The data is highly secured and it not only solve the problem of traditional meter reading system but also provides additional features such as power disconnection, reconnection and the concept of power management. The database stores the current month and also all the previous month data for the future use. Hence the system saves a lot amount of time and energy. Due to the power fluctuations, there might be a damage in the home appliances. Hence to avoid such damages and to protect the appliances, the voltage controlling method can be implemented.

The second case in this system is that, if any robbery occurs in the ATM center by breaking the ATM machine with special tools, the theft can be identified easily and the information is sent immediately. If the robber robs by breaking the ATM machine, the vibration changes the position of the vibration sensor and this is taken as the inputby the vibration sensor in the form of analog signal. If the vibration in the ATM machine is above the threshold level, it is detected as the unusual event. Now the vibration sensor sends the digital signal as the output. This makes the door motor and the buzzer ON and also sends the immediate alert message to the nearest control station and also to the respective banks.

If the robber uses the welding tools to break the ATM machine, the heat is sensed by the temperature sensor. Normally the ATM machine gets heat by their own. Hence air conditioners are used in the ATM centers to cool the ATM center.

In this type of robbery, if the temperature is above 50 Degree Celsius, the temperature sensor senses the heat and detect it as an unusual event. Now this temperature sensor sends the digital signal as the output. This makes the door motor and the buzzer ON and also sends the immediate alert message to the nearest control station and also to the respective banks. This system helps to immediately identify the theft in the ATM center as well as arrest the robber inside the ATM center itself.

The proposed system is explained with the below flowchart
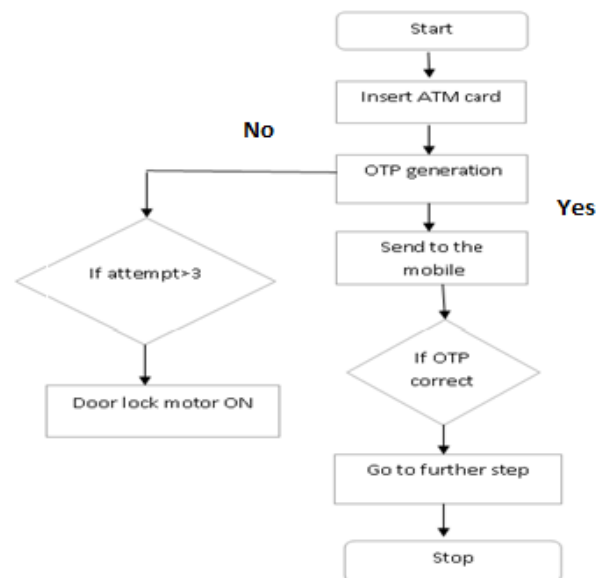
If theft occurs in the ATM machine, information is sent to the respective banks. In proposed system we implement one-time password generation (OTP). Every time user the inserts the card, one-time password will be send to the respective card holder's mobile number. The user can access the ATM card only by entering the correct OTP.

This OTP will be sent through GSM. Card will be processed only if the correct OTP. If the OTP is entered thrice wrongly, the ATM center's door will be locked and the information will be sent to the bank, card holder and control station. We have also placed temperature sensor for detecting the high temperature because some robbers are

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using welding tools to break the ATM machine and MEMS sensors is placed for detecting the position of the machine. If any changes occur by these two types of events, an alert message will be sent to the Bank and the door lock motor will be ON so that the door of the ATM machine is locked. If the robbers use welding tools to break the ATM machine temperature sensor sense the heat and then sends the signal to lock the door.
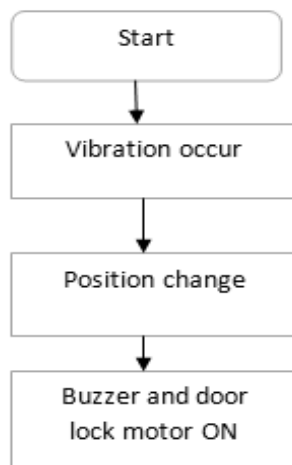
When vibration occurs in the ATM Machine, the vibration sensor senses it. This will be useful to detect the theft and it lock the door and the buzzer also starts to ring. Initially the vibration sensor is placed in the x,y, z axis. When the robber breaks the ATM machine, the position of the vibration sensor gets changed. This is detected as the unusual event and this makes the door motor ON and ring the buzzer. Whenever the user inserts the ATM card the machine, the code is read by the RFID Reader which is connected to the microcontroller. Microcontroller generates the OTP and sends to the user mobile number through GSM. The user enters the generated OTP in the keypad and withdraws money. If the money in the ATM machine is theft by breaking the ATM machine, the vibration sensor senses it and makes the buzzer and door motor ON and the money motor OFF. If the robber use welding tools to break the ATM machine, the temperature sensor senses the heat and makes the buzzer and door motor ON and the money motor OFF.

IV.RESULT

OTP-One-time password is generated in order to avoid the misusage of ATM card by the unauthorized person. Vibration and Temperature sensors are used to identify the theft or robbery by breaking the ATM machine. Door

motor and buzzer is ON in order to identify and arrest the theft inside the ATM center. Immediate information is sent to the control station nearby and to the respective banks.

V. FUTURE SCOPE

This system can also be used in the money deposit machine. This system can also be used in the ATM centers where there is more than one ATM machine. Mild shock can be given to the thief while breaking the ATM machine. The shutter of the ATM center along with the door can be locked.

VI. CONCLUSION

To provide security for ATM user by generating one-time password. If theft occurs in the ATM machine, information is sent to the respective banks. If any breakage of ATM machine occurs, then vibration sensor sense and this will be useful to detect the theft in the ATM machine.

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