



Conservation of Crop Land close to Forest Area against Wildlife using Flow Sensor

Pooja M¹, Sathish K R²

Assistant Professor, Dept. of EEE, ATME College of Engineering, Mysuru, Karnataka, India¹

Assistant Professor, Dept. of EEE, ATME College of Engineering, Mysuru, Karnataka, India²

ABSTRACT: In this paper, the conservation of crops close to the forest space has been a main. Conception and vital issue Animals area unit incursive the crop field over the years and protection of the crop field is that the main concern. The projected technique uses air flow device for detection of untamed life coming into the crop filed and conjointly alerts the person through message, buzzer and attention call using GSM. The most advantage of this system is low price, no skilled person required to operate and animal are not threatened by weapons or shock which would harm them.

KEYWORDS: crop protection, air flow sensor, microcontroller, wildlife.

I.INTRODUCTION

The protection of crop field close to the forest space has been a main matter of interest years ago. The survey says that concerning 30-35% of crops in India are destroyed by wildlife. Providing security for the crop field is a vital criterion. several ancient methodology used is against wildlife protection, due to anxiety and worry wild animals might attack human or the other way around that causes death of animal and human.

In this methodology associate air flow detector is employed to notice animal coming into the crop land. it's more integrated with microcontroller that intern is connected to buzzer to alert the farmer meanwhile scare wildlife through sound and GSM technology for alerting the farmer through message and calls. Additional facility of switching OFF of water pumping motor from remote space through GSM technology is additionally enclosed for the advantage of farmer. The motor is protected and can be turned on solely on licensed person who as OTP. Fig 1 shows the block diagram of planned technology.

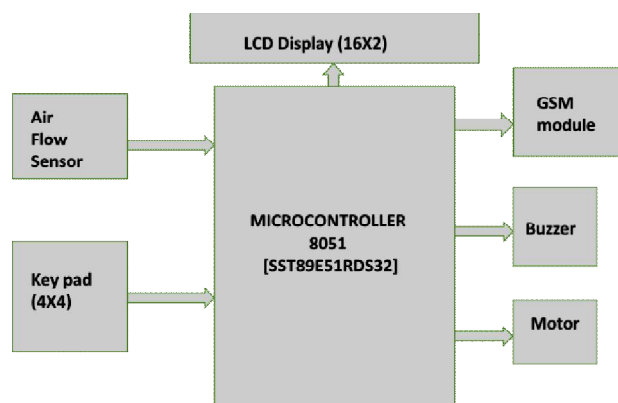


Fig.1 Block Diagram of Proposed Project



International Journal of Advanced Research in Electrical, Electronics and Instrumentation Engineering

(A High Impact Factor, Monthly, Peer Reviewed Journal)

Website: www.ijareeie.com

Vol. 7, Issue 4, April 2018

II.METHODOLOGY

In SMS primarily based crop protection system, we've got used a flow detector to sight the animals. The tube is hooked up to the flow detector; whenever animal's presses that tube/region close to then flow (air) is going to be detected within the flow detector. Once flow is detected then this detector offers a selected signal to the microcontroller. Then microcontroller activates the buzzer and sends SMS to the farmer victimization GSM. Microcontroller is a main heart or Central process Unit of the system.

Every time farmer must enter the password so as to start out the motor in his land, if the entered password is a valid secret pin then solely motor is turned ON. If someone has taken the farmer secret pin alternatively if farmer forgotten to switch off the motor in his site, throughout this case farmer has given the choice of turning off that motor by causation a message to the GSM electronic equipment, thus during this means along side crop protection, self management of motor by victimisation mobile is provided to the farmer.

A. Software used

The μ VisionIDE combines project management, run-time setting, builds facilities, ASCII text file redaction, and program debugging in an exceedingly single powerful setting. Vision is easy-to-use and accelerates your embedded software package development. Vision supports multiple screens and permits you to make individual window layouts any-where on the visual surface.

The Vision computer programme provides one setting within which you'll check, verify, and optimize your application code. The debuggers include ancient options like easy and complicated breakpoints, watch windows and execution management and provide full visibility to device peripherals. Microcontroller programming language used is Embedded C SST Flash Magic Flash Magic is a laptop tool for programming ash based microcontrollers from NXP employing a serial or LAN protocol whereas within the target hardware.

B. Hardware Components

The main elements employed in this project 8051 (SST89E51RDS32) microcontroller, MAX232, GSM modem, 4*4 Keypad, 16*2 liquid crystal display show, airflow detector, driver circuit for DC motor, Buzzer. Number Air flow detector used depends on the realm of the cultivation land or region wherever protection is needed. YF-S201 Hall-Effect Flow Sensor: accurate flow measurement is a necessary step each within the terms of qualitative and economic points of read. Flow meters have well-tried wonderful devices for measuring air flow. Fig 2 shows the flow detector used for the planned project.



Fig.2 Flow Sensor YF-S201



Fig.3 8051 SST89E51RDS32 microcontroller

C. Design and implementation of the project

Initially the kit will be at ON state. For turning ON of motor secret key need to be entered through data input device. The data input device is operated as priority encoder. The secret key used may be OTP or a login pin. Once the kit is activated solely then water pumping motor may be turned on. Air flow device and pipes are placed encompassing the crop land wherever protection are needed. Air flow device used works more accurately for 50mts on both the end. Each the tip of air flow device are connected with tubes and buried gently on the surface of the land. The tubes used are flexible such it will face up to the load of grazing animals to elephant. Once the animal invades the crop field and walks across/on the tubes the pressure is formed within the tube. As a result of change in pressure of air in the tube the fan within will rotate and also the signal is sent to microcontroller. The microcontroller intern sends an indication to

International Journal of Advanced Research in Electrical, Electronics and Instrumentation Engineering

(A High Impact Factor, Monthly, Peer Reviewed Journal)

Website: www.ijareeie.com

Vol. 7, Issue 4, April 2018

the buzzer and buzzer will hoot mean while the owner are going to be alerted through a message using GSM Technology. The buzzer will continue to hoot till the owner turn off it employing a GSM technology. If there's no response from the land lord the attention call will be dialled. Buzzer used whereas can scare the animals additionally. Since the farmer gets the message he will take precaution measure for safeguarding the crops. The hooting of buzzer additionally helps the person close to the farm land to become acutely aware. The inter connection of component is shown in Fig.4. The project operating model flow with hardware and software integration is shown in the Fig.5

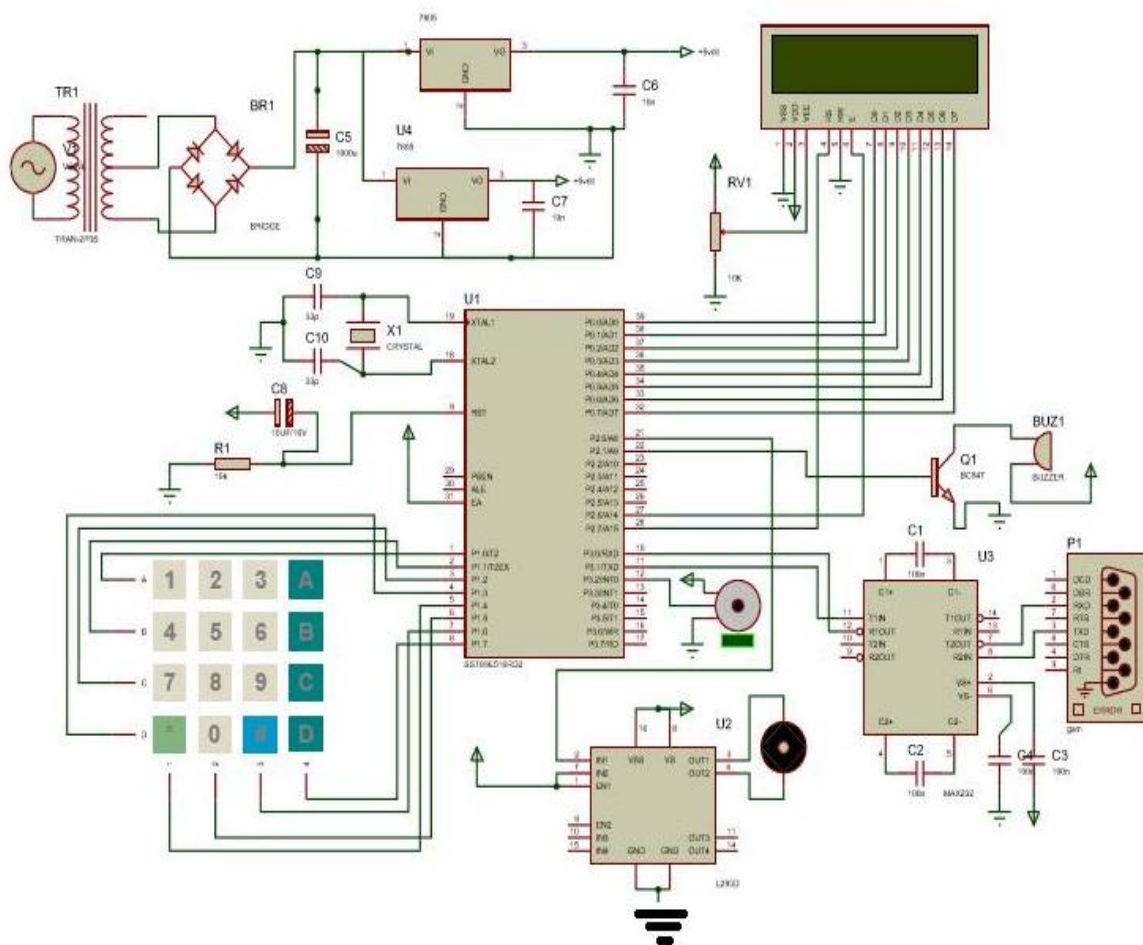


Fig.4 Interconnection of Components

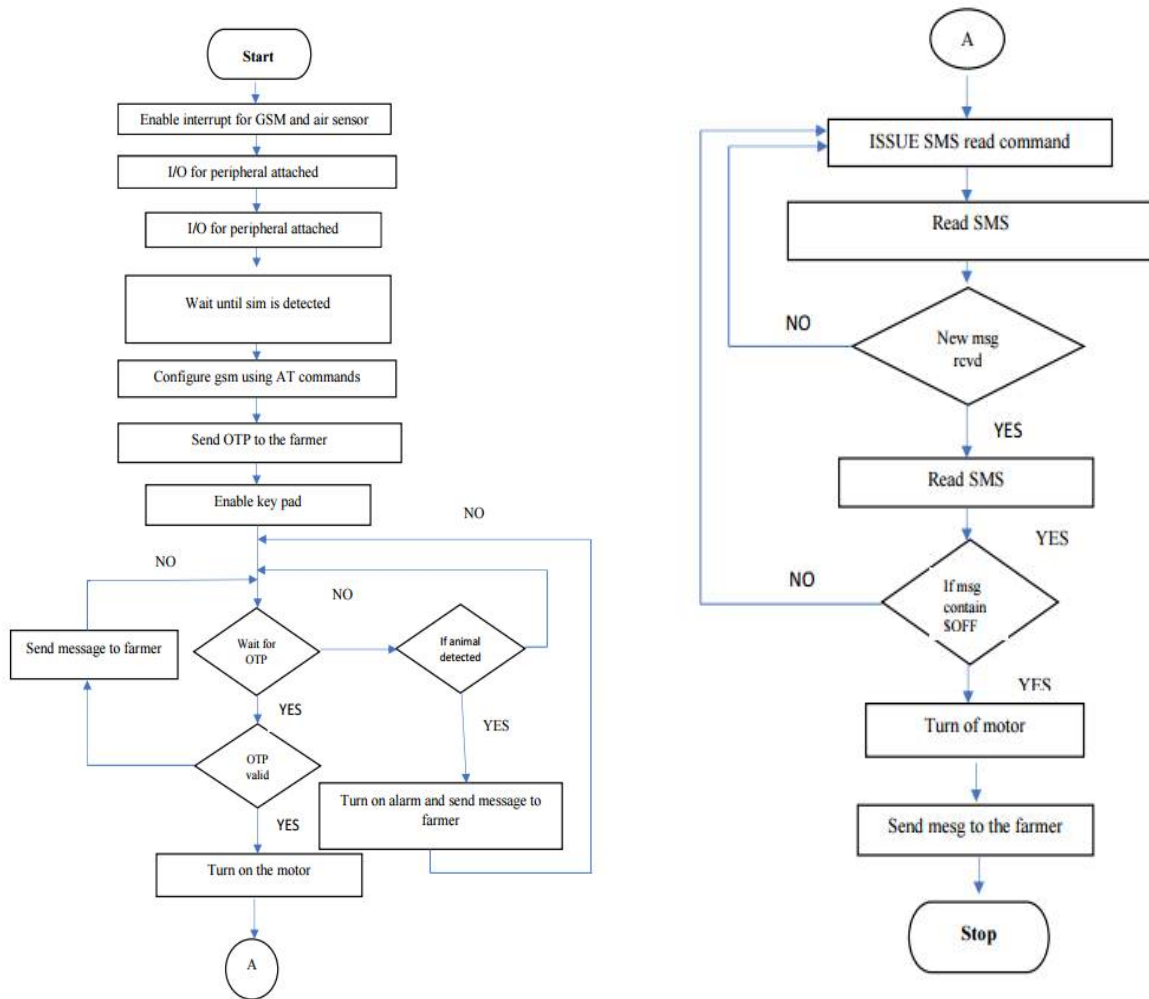


Fig.5 Flowchart of Project

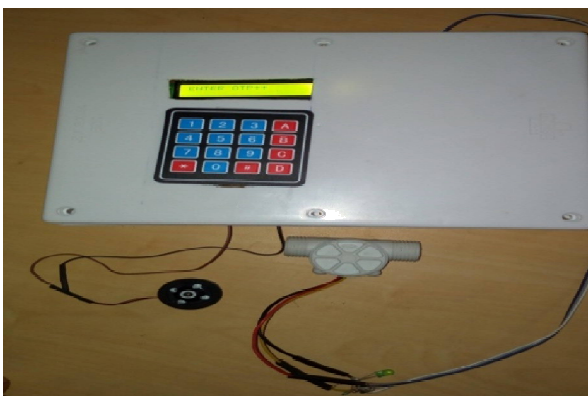


Fig.6 Proposed project Kit



Fig.7 View inside the Kit.



International Journal of Advanced Research in Electrical, Electronics and Instrumentation Engineering

(A High Impact Factor, Monthly, Peer Reviewed Journal)

Website: www.ijareeie.com

Vol. 7, Issue 4, April 2018

III. RESULT AND DISCUSSION

In the proposed project the air flow detector is activated once there's a change in pressure within the tube when the trespasser stamps over it. It's practically tested and verified for a human pressure and cattle (Cow) pressure and expected results were obtained.

IV. ADVANTAGES AND DISADVANTAGES

The planned project is of low price compared to different ways and is more effective. By victimisation protection system crop will be protected. Threatening of life can even be avoided. The disadvantage is that there's no plan of intruder which may facilitate farmer to require precaution measure.

V. APPLICATION AND FUTURE SCOPE

In future the kit may be integrated with camera that the trespasser image may be recorded and sent to the licensed person. Additionally totally different sounds of high disable may be accustomed scare animals till farmer comes overland and take any action.

It may be used for top alert places, trespasser detection at restricted space, border patrolling, wild animal detection close to forest space, watching of cultivation land, protection against motor stealing, etc.

VI. CONCLUSION

In the projected project the destruction of crops by wild animals will be avoided. The farmer is benefited with smart wealth as his crops area unit is protected. The projected project don't have any impact on animals coming into the crop field has it don't contain any radiation penetrating there body, no experience of minute shock etc. Since motor used can be turned off or controlled from remote place, the farmer presence within the crop land for an extended time may be avoided.

The projected project is of very low price, additional economical and no specialised skill is needed to operate the kit

ACKNOWLEDGMENT

The authors would like to thank the authorities of ATME college of engineering, Mysuru for all support and encouragement received in carrying out this work.

REFERENCES

- [1] D. Jerline Sheebha Anni1 and Arun Kumar Sangaiah, "An Early Warning System to Prevent Human Elephant Conflict and Tracking of Elephant Using Seismic Sensors," VIT University, Vellore, Tamil Nadu, India jerline_dhanaraj@yahoo.co.in 2 School of Computing Science and Engineering, VIT University, Vellore, Tamil Nadu, India sarunkumar@vit.ac.in
- [2] E.Kanniga1* and M .Sundararajan2 "Design of 8051 Microcontroller Based Security System with a Laser Beam Network," 1Department of Electronics Tele Communication, Bharath University, Chennai-600073, Tamil Nadu, India; kanniga.etc@bharathuniv.ac.in 2Electronic Sciences, Bharath University, Chennai-600073, Tamil Nadu, India; msrajan69@gmail.com.
- [3] M.Priyadharsini1 , V.Arunbalaji2 , T.Karthikaa2 "GSM Based Motor Control for Irrigation," Assistant Professor, Department of EIE, Adhiyamaan College of Engineering, Hosur, Tamil Nadu, India 1 UG Student, Department of EIE, Adhiyamaan College of Engineering, Hosur, Tamil Nadu, India 2
- [4] Ms. Bindu D, Mr. Dilip kumar M D, Ms. Mamtha B & Mr. Prashanth P, Mr. Yathisha L, Assistant Professor, ATME College of engineering, Bannur road, Mysore-28 "PREVENTION OF WILD ANIMALS ENTERING INTO THE AGRICULTURE FIELDS," ATME College of engineering, Bannur road, Mysore-28.