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Implementation of Agricultural Fence Security Based RFID Technology

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Abstract: The problem of crop vandalization of wild animals is pronounced that sometimes farmers decide to leave the area barren due to wild animal attacks. The problem of a crop vandalization has become a major social problem in current time.
The goal of the project is to construct a virtual fencing that functions similar to physical fencing with RFID and PIR sensors embedded so an illegal crossing of the patroller with RFID occurs an alert will be sent. A virtual fence is a barrier that uses electric shock to determine animals or people from crossing a boundary.
Keywords: RFID, PIR sensors, image processing

1. INTRODUCTION

The problem of wild animal attacks on crop fields i.e. crop vandalization is becoming a very common phenomenon in the state of India. These animals attack on fruit orchards and destroy the flowerings and fruits. In both cases, this leads to significant financial loss to the agriculturalists and orchard owners.

The problem is so pronounced that sometimes agriculturalists decide to leave the area barren due to these animal attacks. This paper aims at helping agriculturalists in protecting their orchards and fields and save agriculturist from significant financial losses and unproductive efforts that they endure for the protection their fields.

1.1 Methodology:

This paper proposes a method to construct a fence with RFID sensors to protect the fields against animals. Their security is also important in many cases when they are forced to move out of the fence area by some miscreants. The module consists of a Arduino which receives the information from the RFID and monitors the shock providing circuit of the fence.

Block Diagram:

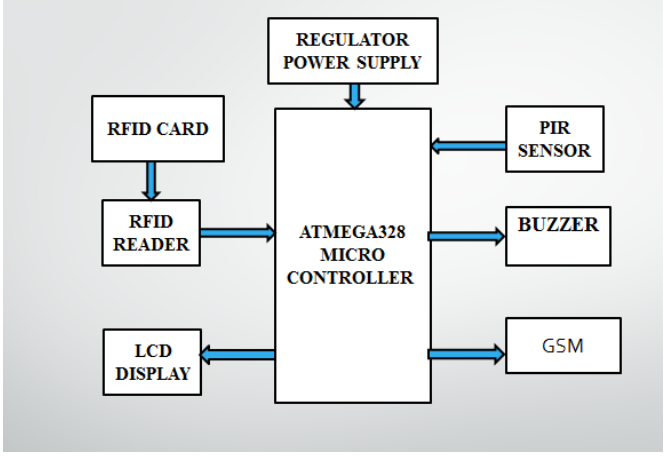

Fig 1: Block diagram of proposed system

In this project we are making use of RFID sensor to sense the movement of Tag holders who are supposed to patrol within the fence area. Whenever he passes the boundary the module will be alerted by the sensor since the RFID sensor senses the Tag number. The controller is programmed in such a way that it interprets the RFID sensor data and matching with RFID tag numbers in the database , sends an alert if needed.

The LCD is used for display purpose which gives the details like data about the trespasser., Several LEDs are used to indicate the status of the components and main power supply.

Once the operation of the circuit starts and when the location of animal/person is beyond the predefined fence value then the circuit generates shock. Also gives sound through a buzzer. The power supply is used to give power to all the above components of the circuit.

1.3 Advantages:

1. Effective, accurate and adaptive
2. Requires no human supervision
3. Economical
4. Real time monitoring
5. Highly flexible

1.4 Limitations:

1. Misuse of RFID Cards
2. The RFID cards must be carefully issued
3. Module should be robust and should be installed at proper place
4. RFID tags are application specific i.e. no one tag fits all.

Results:

In this project we are making use of RFID sensor to sense the movement of Tag holders who are supposed to patrol within the fence area.

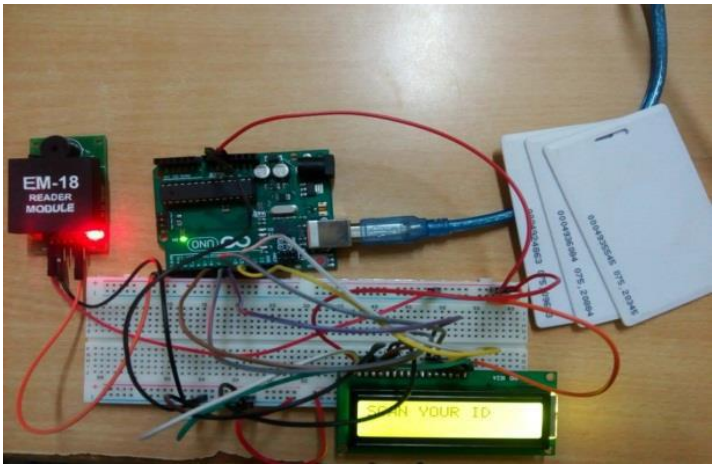

Fig 2:RFID Security Output

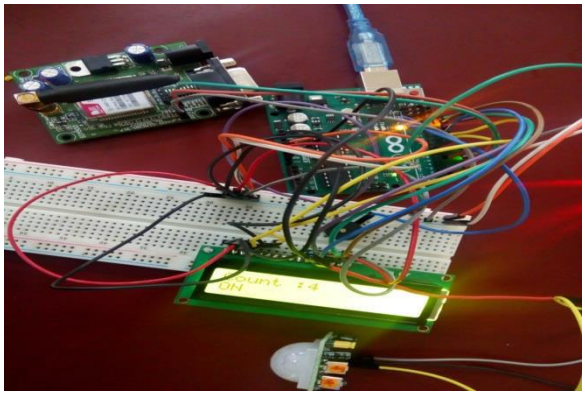

Fig 3:PIR Sensor Output

Fig 4: Fencing Output

An **electric fence** is a barrier that uses electric shocks to deter animals and persons from crossing a boundary.

FUTURE SCOPE:

Agricultural based security fence can be implement using **Image processing** where the image of the animal can be captured by cameras and processing is done using MATLAB and communicated through wireless networks.

CONCLUSION:

The system is very useful and affordable to the farmer and it protects the farmland. RFID is one of the consistent and fast means of identify the material object. Earlier bar codes were preferable compared to RFID. Because of their cost, now a days RFID are easily available and are more convenient to use. And the proposed system is designed in such a way that it will reduce the user load and also tries to solve the unauthorized human entry.

REFERENCES

[1]. R. Ramani Assistant professor/ECE , Selvaraju Assistant professor/ECE S. Valarmathy Assistant professor/ECE (V.M.K.V ENGINEERING COLLEGE,SALEM TAMIL NADU INDIA) P. Nirnjan design engineer tatva software BENGALORE Design and implement a bank locker security system based on RFID and GSM technology.International Journal of Computer Applications (0975 – 8887) Volume 57– No.18, November 2012

[2]. Abdelmoula Bekkali, Elyes Ben Hamida, and Abdullah Kadri Qatar Mobility Innovations Center, Doha, Qatar Email: abdelmoulab, elyesb, abdullahk@qmic.comKhaledShaaban Qatar University/Department of Civil and Architectural Engineering, Doha, Qatar Email: kshaaban@qu.edu.qa Journal of Traffic and Logistics Engineering, Vol,1, No. 2 December 2013Smart Tracking System for School Buses Using Passive RFID Technology to Enhance Child Safety.

[3]. Ashwin K.1, Aswin Perumal A.2, Krishnakumar S.3, Maheshwari M.4U.G. Scholar, Department of CSE, Anand Institute of Higher Technology, Kalasalingam Nagar, OMR, Kazhipattur, Chennai, Tamilnadu, India. Assistant Professor, Department of CSE, Anand Institute of Higher Technology, Kalasalingam Nagar, OMR, Kazhipattur, Chennai, Tamilnadu, India .RFID Based Student Attendance and Monitoring System.Vol.3, Special Issue 1, February 2015

[4]. Grewal Kaushal, Rishabh Mishra, Neelam Chaurasiya, Paramdeep Singh RFID BASED SECURITY AND ACCESS CONTROL SYSTEM USING ARDUINO WITH GSM MODULE IJEEE, Vol. 2, Issue 2 (April, 2015) e-ISSN: 1694-2310 | p-ISSN: 1694-2426

[5]. Stephen a. Weis, Sanjay E.Sarma, Ronald.L.Rivest a paper on "Security and Privacy aspects of low cost radio frequency identification Systems". P.O. Bishop, Neurophysiology of binocular vision, in J. Houseman (Ed.), *Handbook of physiology*, 4 (New York: Springer-Verlag, 1970) 342-366.