Restricted Area Security System based on IOT

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Abstract

Security Issue is very paramount in organizations now days. Security is the main concern of the world now days. Sensor based home security system are the high technology and methodical systems which connect wirelessly and ensure real time operation and indication of the threat to the house. The idea of comfortable living in home has changed since the past decade as digital, vision and wireless technologies are integrated into it. In this project design and implementation of laser based security system with an IOT environment has been presented, which will resolve various security issues like unauthorized intruder entry, burglarprotection etc. Therefore continuous monitoring of the home/apartment is possible. The system is cost effective, reliable and has low power consumption.It may look something out of a science fiction movie but lasers are interesting to work with. This system would not require an expert at deck.They could be concealed behind garden plants or flower vases at home and can effectively be installed by anybody who wishes to do so.

Key words*: IoT, LASER*

I. INTRODUCTION

The laser based security system is designed to provide maximum security to a given restricted area where the presence of any person is not desired. If someone tries to pass over the boundary line defined by laser lights, an alarm will be triggered. The device in the restricted area security system package will be wireless. It will work wirelessly and inform the admin by triggering the alarm and warning lights if found some unwanted entry. Present project is designed using Arduino UNO and Esp8266 to catch burglar in restricted area. This project contains a laser installed at the door some reflecting mirror and a light sensor along with that it also require and alarm and warning light. We have considered 10 seconds or less to start for this project depends upon the internet speed. System can be fixed anywhere inside or outside as per the requirement. We call the sensor as receiver. When the system activates, the laser gets on, so that the LDR

II. INTERNET OF THINGS(IOT)

IoT or Internet Things refers to the network of connected physical objects that can communicate and exchange data among themselves without the need of any human intervention. It has been formally defined as an "Infrastructure of Information Society", because IoT allows us to collect information from all kind of mediums such as humans, animals, vehicles, kitchen appliances. Thus any object in the physical world which can be provided with an IP address to enable data transmission over a network can be made part of IoT system by embedding them with electronic hardware such as sensors, software and networking gear.

III. RESTRICTED AREA SECURITY SYSTEM

An important factor to consider when we talk about home automation is Security. Home security is a very important feature of home automation and maybe the most crucial one. Home security made a drastic changes in the past few decades and continue to advance much more in the coming years. Previously home security systems meant having an alarm that would go off when somebody would break in but a smart secure home can do much more than that. Therefore the main objective of our work is to design a system which can alert the owner and others of an intruder break-in by sending a notification to their smart phones. The owner will also have the ability to stop or start the alarm remotely using just his smart phone. This system will help the users to safeguard their homes by placing the system on the doors or windows and monitoring the activity through their smart phones. . There has been an unprecedented growth in the number of devices being connected to the Internet since past few years. All these devices connected to the internet are part of the IoT infrastructure which can that allows these devices to send and receive data among each other. This is why it is beneficial to use such an existing infrastructure for designing the proposed security system. An alarm system that sounds the buzzer is of no use when a user is not present in the home to take action. When the owner is away communicate with each other. The IoT network consists of embedded electronics, sensors and software from their home, they want to be assured that their home is protected by intruders and thieves while they are gone. This is why

the proposed system keeps the owner informed in the real time about the security status of their home. The designed system informs the user as there is a breakin so that the user can take necessary actions.
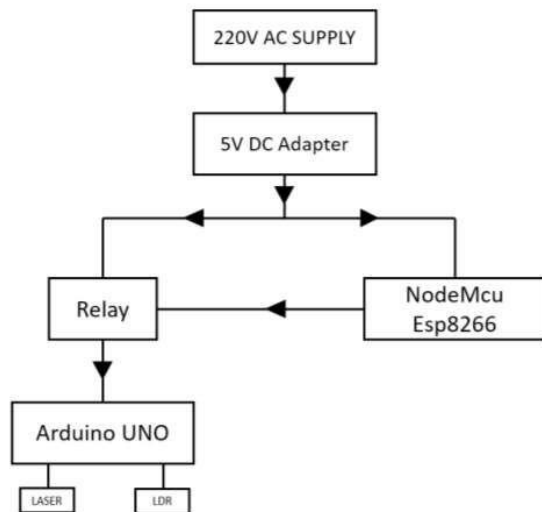

Figure. Block Diagram for Restricted Area Security System

IV. OBJECTIVE

Our work focuses mainly on the security aspect of restricted zones as well as organizations and homes. The aim of this project is the prevention of unauthorized access or damage wirelessly investigate along with that this project is cost effective solution that will provide security to restricted areas remotely and will also keep security enable against intrusion/burglars in the absence of admin. The system uses latest wireless communication WiFi access to the system for security and automated surveillance. Security has been a major issue where crime is increasing and everybody wants to take proper measures to prevent intrusion. System will works on different wireless communications other than IR and Bluetooth. The proposed system characteristics involve remote controlling, intrusion detection, system security

V. RESULT

Then a fixed LDR will sense the threshold intensity by LASER and if found the intensity less than the tthreshouldThis whole algorithm runs with the help of a few computer codes written in C language. The input voltage for the hardware is only 12V, hence it is very cost efficient and user friendly. This little device can be installed in any of the important rooms of an institution, for example the examination cell, the director's office, special laboratories which requires permission and many more. This device can work flawlessly and in future it can be proved as a smart choice for home

security. As per his/her convenience the laser line can be extended with the help of small mirror pieces, as mirror perfectly reflects laser lines. Like this the entire area of a door or a window or specific stealthy entry points can be covered with multiple reflecting laser lines emitted from a single source. As soon as an intruder tries to enter the monitored entrance, the laser circuit breaks and a loud buzzer starts buzzing loudly with just a delay of a few nanoseconds.

VI. CONCLUSION

This is our first approach towards innovation in security systems using laser technology. This is a user friendly, low cost and robust system which runs using simple lines of code. The concept is easy to implement in banks, research centres, confidential rooms, offices, industries, apartments and restricted areas. The results procured are encouraging, yet many improvisations may be included to increase the accuracy of the system. The performance of light sensor (LDR) increased after covering with a black cylindrical cap, also we can use high power laser, more precise light sensor and more number of mirrors for multiple reflection but it will be costly so we are making a prototype of security system. This wireless alarm system can be installed at any restricted area on your own and does not require a long-term commitment for a home monitoring service, though the service itself is inexpensive and offers great customer service.

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