

## Implementation of Efficient Security System

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### Abstract:

The development of a low cost and efficient security system is discussed in this paper. The proposed system uses mainly PIR (Pyroelectric Infrared) sensor to detect presence of people in the premises, RFID reader for authentication purpose and a web cam for video monitoring. The proposed scheme can be used in any place where surveillance is needed. It easily detects intruders. Further the scheme also can be used to track and keep record of the movement of guards in the premises..

**Keywords:** PIR Sensor, Cortex-M3 (LPC 1768), RFID, Wireless A/V Camera, LDR Sensor

### I.INTRODUCTION

Generally to guard the premises against theft, crime, security guards will be employed. The guards have to go round the building at regular intervals and keep vigil. Several security measures for establishments are available and each scheme has its own merits and drawbacks [1-4]. This paper proposes an efficient scheme for providing vigilance to establishments, homes and for smart environments etc. In addition the scheme also gives provision to keep a watch on the performance of guards on duty and their movements in the premises..

### II.PROPOSED SCHEME

The proposed scheme is schematically shown in figure 1. The system consists of PIR sensor, RFID reader and wireless camera on all four sides of the building all interfaced with micro-controller. The micro- controller used is Cortex-M3 LPC 1768.

The operation of the system can be explained with fig2. In any security arrangement the guard will be going round the building at regular intervals. During every round whenever he crosses the PIR sensor a signal will be sent to ARM processor. After the lapse of prefixed delay set , if no proper card is read by RFID reader the buzzer will ring and cameras will be switched on to record the events .The recording is stored in the PC.

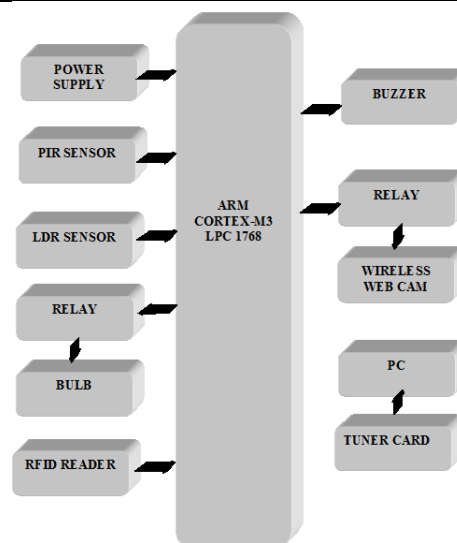


Fig 1: Block diagram

In case when a person crosses PIR and gets identity verified with RFID reader on one side but does not reach the RFID reader on other side within the stipulated time buzzer will ring alerting other guards. Cameras will be switched on all sides.

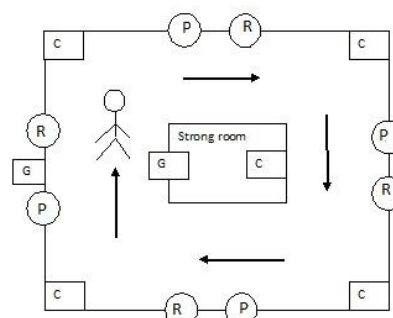


Fig 2: Functional diagram

The scheme also helps in tracking the performance of guards on duty. The recordings can be erased every day evening before the guards take up duty in evenings. In case of any need data can be stored separately. This scheme helps to find out the guard proper working during the daily duty hours.

### III. RESULTS AND DISCUSSION

The system developed is shown in figure 3. The system is tested for its proper functioning. To test the working the pre set delay is taken to be 10 seconds. The results are presented in figures 4 and 5.

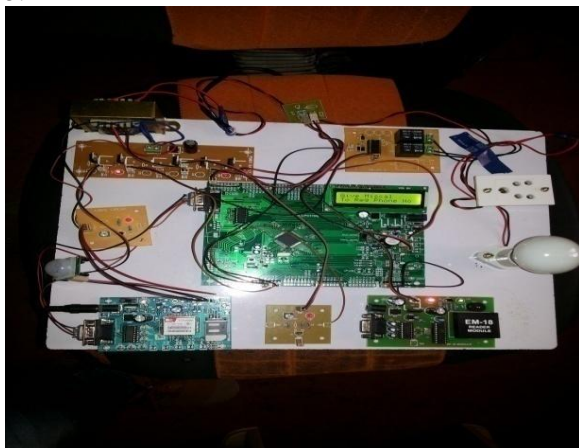


Fig 3: Efficient Security System



Fig 4: Display when proper card placed in time

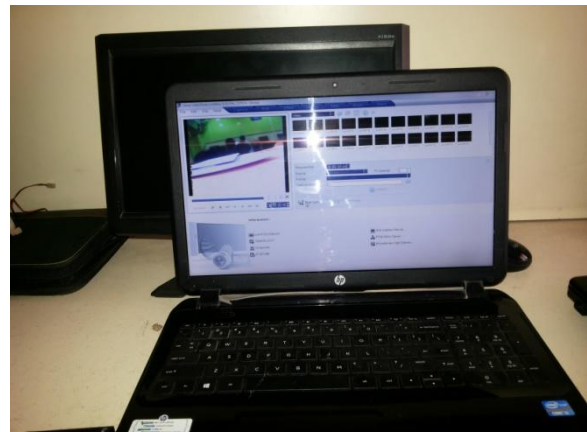


Fig 5: Snap shot of video monitoring

### IV. CONCLUSION

An enhanced security system is built and tested. The performance of the system is found to be satisfactory. The scheme can provide reliable security for any establishment and keeps a watch on any intruder.

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