

## ABSTRACT

By the changing of times, the security system felt very important, not only in public places but at home also need to use security systems to provide security and comfort for homeowners. However, the existing security systems do not provide flexibility for homeowners, due to a limitation of time and distance.

In this final project, was design a microcontroller based security system to control a home security system by using a PIR sensor for detecting the presence or absence of people coming into the house. Microcontroller will turn on the system when the PIR detects the presence of someone in the area of sensor coverage. The system is a system microcontroller programmed using C language to turn the relay that functions as a switch for phone keystrokes in the order workflow system. If someone comes in, then the PIR sensor will detect it and the camera phone will automatically capture the picture of the room, then the image will be sent by mobile phone via MMS services to mobile phone of homeowners.

Based on experiment was done, this home security system will work if only PIR sensor detects an object, especially human. This home security system can send MMS only to one user, who already in the contact list number of handphone and located in first list. The process of this security system, from idle position until sending MMS needs time for 45 seconds. Fastest response time from the sender to send the MMS to the user is 58.2 seconds at 05.00 am, and the longest response time was 115.8 seconds on the clock 1.00 pm. From the ten experiments that already done, there are obtained the average time of system works from the early detect objects until an MMS is received by the user's 112.7 seconds.

**Keywords:** *PIR sensor, MMS, Microcontroller*