ABSTRACT

Security has become an important part in human life. Security is a further requirement that must be fulfilled after human physiological needs are fulfilled. The proliferation of crimes including theft inside buildings or private homes make many people develop an efficient security system.

This research is the realization of object localization using Hokuyo UTM 30LX Laser Range Finder in the room. Sensor created the map of all the objects in the room into a 2D map. Initial Map is a map of the room when there is no movement of the object in the room. The results of the next scanning will always be compared with the Initial Map. If there are significant changes between the laser scan results with Initial Map then there is an unknown object in the room. The system determines the location of the object and directs the camera to the location of the object's movement then identified whether the movement of the object is human or not.

This research shows that Hokuyo UTM-30LX Laser Range Finder can create a2D maps of the room. System can detect the movement of objects in the room and determine the location of the moving objects in the room. This location obtained is used to drive the servo motor attach with the camera towards the objects in the room. Based on analysis and testing showed that the laser sensor has a noise so that the appropriate threshold is needed to avoid error detection. From the results it appears that the servo motors not move exactly to the location of the detected object. There is a slight deviation between the servo movement with the actual location of the object but it is still acceptable to build a reliable system.

Keywords: Building Security System, Object Localization, Laser Range Finder