ABSTRACT

The current environmental security monitoring system in the settlements is generally still done conventionally, using security personnel by patroling from house to house to observe and detect suspicious matters. This method is less effective because by relying on the ability of the sense of sight and hearing difficult to be able to reach every point / location hidden place that is vulnerable to theft. In addition, the continuity of the surveillance is also limited only at certain periods of time where theft can occur precisely when the security personnel is not in patrolling period. .

To solve the problem, has designed a security monitoring system device that consisting two parts, i.e: the home part, consisting of sensors and microcomputers equipped with wifi communication module (ad hoc), and the device part that placed in the surveillance center (guardhouse), that is a computer/laptop. In this final project (which is a part of a group), focused on the part of the device at the guard post, which is an application software-based Graphical User Interface (GUI) with features: to receive sensor results from each house to display on the screen including the identity of the home and the point of the location of the active sensor, which accompanied also with a floor plan of the sensor location, live video display with video/photo recording feature, and VoIP communication features via smart phone.

From the field results the system can function properly for all the features as planned. The ability of the farthest range of connections between devices in an ad hoc network for indoor environment is 45 meter, and the VoIP quality presented by throughput: 54.33 Kbps.

Keywords: environment security system, sensor, ad hoc network