

## ***Abstract***

*Security systems that are widely used in residential areas, especially housing complexes are still conventional. The security system is still relying on traveling patrol conducted by the security personal. The security system is in fact considered less effective because the security personal can only monitor the front of the house and the perpetrators of theft can still hide. So this way is considered less effective.*

*To improve the effectiveness of such security way, then created a sensor system installed in every home. Sensors used are light sensors (Light Dependent Resistors), magnetic switch sensors, and heat sensors (Passive Infra Red) are installed at point of location that are considered vulnerable to theft. The sensors are connected with Raspberry pi which is equipped with Wifi Adapter. Sensor detection results are transferred through ad-hoc networks between homes to guard posts as monitoring centers. In this final project (which is a team), only focused on the part of the home sensor system in the form of a prototype that is built by 2 units of Raspberry Pi which represents 2 houses.*

*From the test results, Adhoc network capability built by a raspberry able to reach up to 45 meters with VoIP quality is characterized by an average throughput of 54.33Kbps.*

***Keyword : Ad Hoc, Sensor, Residential Environment, Security, Raspberry pi***