

## **ABSTRACT**

The growth of communication technology based on wireless is now grows rapidly start with WiFi (Wireless Fidelity/WLAN) with limited coverage and capacity then WiMAX (Worldwide Interoperability for Microwave Access) with the larger coverage and higher capacity. IT Telkom provide wireless LAN to get the internet access especially for indoor area. But now, access wireless using WLAN is still be a classical problem that not yet solved. Though WLAN is very close to the routines of students and lecturers in IT Telkom. Wireless access can be enjoyed only on the particular spot.

In this Final Project, performed optimization wireless LAN existing IT Telkom especially A building using Global Optimization Algorithm with respect to the spot or area that usually visited by student and lecturer that have a possibility to access the internet. This research use some software to run the algorithm and to simulate WLAN network in A building before and after optimization.

After optimization, required only four access point from six access point existing to cover area in A building for each floor. The result from optimization can reduce overlap area from  $\pm 50\%$  to  $\pm 25\%$  after optimization.

Key word : WLAN, *Global Optimization Algorithm*, *coverage*