

ABSTRACT

Wireless Local Area Network (WLAN) technology is a technology that is developing very rapidly in the of telecommunications. At present, almost every institution, campus and school has used WLAN technology. One of them is SMAN 1 Cibungbulang, located in Bogor. The current role of WLAN is very much needed to support student teaching and learning activities, so network planning and optimization of access point placement are needed so that all school areas can be well covered by the network, especially in local school classrooms.

In this Final Project, a WLAN network has been re-planned and the optimization of the placement of access points in the Cibungbulang Senior High School area. This Final Project uses several supporting software such as InSSIDer and Radiowave Propagation Simulator (RPS). InSSIDer software is used when performing a walktest as a measure of signal reception under existing conditions and also when a walktest performs optimization. Coverage area planning calculations used in this Final Project work is the COST 231 Multiwall Model Indoor propagation model in which the effect of damping on walls and other building materials is taken into account so that the calculation results approach the actual situation. Before the implementation of the placement of access points in SMAN 1 Cibungbulang, area coverage simulation was carried out using RPS software. From the simulation results it can produce the average signal strength received by the user. Simulation results are used as reference points for placement of access points to be implemented in schools.

Based on the results of realization and measurement it can be concluded that the number of access points needed to cover the entire area of Cibungbulang Senior High School is as many as 6 access points with a maximum cell radius per access point of 32m. The average signal strength received by each user based on the results of the walktest after optimization is -63 dBm and some places with the minimum signal strength of -48 dBm.

Key Words: WLAN, Coverage Area, COST 231 Multiwall Model Indoor, Walktest, InSSIDer, Radiowave Propagation Simulator