

ABSTRACT

Wireless network technology is a development in the field of telecommunications, especially in the IEEE 802.11 standard which conducts deeper research on wireless, every company, office and university has implemented wireless networks in providing data or internet access facilities, the problem that occurs in research is in the signal coverage area which are not thorough in terms of signal strength and interference problems that can interfere with signal propagation, the research object is Telkom University in the Mangudu building in the manufacturing process room and equipment room, the research process in analyzing the condition of wireless networks at 2.4 GHz and 5 GHz frequencies by using the network development life cycle (NDLC) methodology as a systematic research flow and technical analysis applying the wireless site survey (WSS) method assisted by ekahau and netspot software in providing information regarding the implementation of wireless networks in the coverage area, the results of the research provide an explanation of the current conditions in the application of wireless networks, in the coverage area at the 2.4 GHz frequency, it gets good indicators in deployment because it has a signal strength below -60 dBm, but at the 5 GHz frequency it has problems in its distribution where it has an indicator of more than -60 dBm, even when the production machine is turned on it can give a decrease in signal power, and research takes into account interference that can occur because production machines by calculating the signal to noise ratio and building area can have an impact on the spread of signals in signal propagation through the air in the calculation of free space path loss , provides recommendations in the simulation of changes in device placement and power application at 2.4 GHz with 200 mW and 5 GHz with 100 mW.

Keywords— Coverage area, wireless, network development life cycle, wireless site survey, signal to noise ratio, free space path loss