

ABSTRACT

Information and communication technology is growing rapidly. One of them is called WLAN technology (Wireless Local Area Network) IEEE 802.11.b or commonly known as WiFi. WiFi is a system of DSSS (Direct Sequence Spread Spectrum) that is designed to cover an area up to 100 meters diameter, and connects hundreds of computers. WiFi system operates at four different bit rates, namely 1, 2; 5.5, and 11 Mbps. Bluetooth is an FHSS system (Frequency Hopping Spread Spectrum) that designed to cover up to 10 meters. The main application of Bluetooth is the short range communication, including communication between the notebook, palm units, mobile phones, and so on in a "piconet". Bluetooth itself operates at 2.4 GHz frequency band with IEEE 802.11b or WiFi. This condition, where the WiFi and bluetooth technology used simultaneously is risky because interference of these technologies both operate on the same frequency band is 2.4 GHz.

In this thesis, measurements were taken to see the effect of Bluetooth interference on system performance of WLAN IEEE 802.11b (WiFi). The parameters used are the transmission time and throughput. Based on these parameters, interference effects will be obtained which can result in a network of WiFi service eligibility.

Results of the implementation that is done in this study found that when sending JPEG file while Bluetooth is ON (BT 1 meter distance) declined the quality of the transmission by 7,53 %, throughput by 5,52 %, On the other hand while Bluetooth is ON (BT range 0,5 meters) declined the quality of transmission time up to 10,37 %, the throughput of 8,04 %. At the time of MP3 file delivery when Bluetooth is ON (BT 1 meter distance) declined in the quality of transmission time up to 13,35 %, throughput by 9,98 %, while when Bluetooth is ON (BT distance of 0.5 meters) declined in the quality of time transmission of 18,07 %, throughput by 13,32 %. At the time of delivery of AVI file when Bluetooth is ON (BT 1 meter distance) declined the quality of transmission time up to 21,32%, throughput by 16,01%, while Bluetooth is ON (BT distance of 0.5 meters) declined the quality of time transmission that is equal to 26,43%, throughput by 19,25%.

Key word :Interference, IEEE 802.11b, Bluetooth, transfer time, throughput.