

ABSTRACT

The final task presents analysis of the performance degradation of IEEE 802.11b WLAN due to the presence of Bluetooth piconets. The IEEE 802.11b is a direct sequence spread spectrum (DSSS) system operating in the 2.4GHz band. It is designed to cover large areas, up to 100 meters, and connect hundreds of computers. The system operates at four different data rates of 1, 2, 5.5 and 11 Mbps.

Bluetooth is a frequency hopping spread spectrum (FHSS) system operating in the same frequency band as the IEEE 802.11b. The primary applications for Bluetooth are along the lines of a Wireless Personal Area Network (WPAN), involving relatively short distances, for communication between notebooks, palm units, handphone, etc within a “piconet”.

In this final task, a model is developed that captures the performance impact of Bluetooth interference on the IEEE 802.11b packet reception that expressed as throughput, parameterized by the IEEE 802.11b data rate, packet size, and a number of Bluetooth piconets, as well as distance between the collocating IEEE 802.11b and Bluetooth radios.

Both systems share the same spectrum frequency, so it is very possible that will appear interference. It's need a measurement to watch the impact of Bluetooth to WLAN IEEE 802.11b while the analysis specialized on the calculation of packet error probability of IEEE 802.11b packet that collided with Bluetooth packet.

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