

## **ABSTRACT**

Power Line Communication (PLC) is a technology that uses an electric power supply network as a medium for transmitting data. The basic principle of this technology is to inject data signals into electrical power lines at a frequency between 1-30 MHz. In practice, PLC has interference problems such as background noise, impulse noise, and narrowband interference. Of course, this will affect the quality of data transmission to the destination, so we need a channel coding method or technique that can overcome various kinds of interference.

in this final project proposed a Convolutional code channel coding technique with the Forward Error Correction (FEC) method to calculate the Bit Error Rate (BER) and Signal-to-Noise-Ratio (SNR) values, then add the calculation of Quality of Service (QoS) to measure quality a network with Wireshark simulation software.

The simulation results show that the maximum value of 5 dB gain coding has been successfully obtained by adding a channel coding technique of 1/3 convolutional code, constraint length of 7, then using the Viterbi decoder algorithm, namely soft decision.

### **Keywords:**

**PLC, FEC, BER, SNR, QoS, Convolutional code, Constraint length, Viterbi decoder**