

ABSTRACT

Learning blocks of digital communication systems in the Faculty of Applied Sciences, especially in the Diploma of Telecommunications Engineering, have not used simulator tools to facilitate students in understanding the digital communication system block learning material, therefore a learning simulator is needed to support understanding of digital communication systems. This is indicated by the results of the questionnaire where out of 50 correspondents, almost 99.97% needed a learning module simulator for digital communication systems.

This final project will produce a learning simulator block digital communication system on the rayleigh fading, AWGN, and ideal channel for MATLAB based Image. The block of digital communication system consists of signal information, source coding, channel coding, digital modulation, channels used are ideal channels and Rayleigh fading channels, image processing or images that are processed in a frame are simulated and analyzed by comparing BER values in the demodulation section.

This Final Project produces a learning module simulator of the Digital Communication System Block with information in the form of images that are in accordance with the theory and can assist students in understanding image processing or image processing in blocks of digital communication systems.

Keywords: *Digital communication system, source coding, channel coding, Rayleigh, AWGN, and BER.*