

## **ABSTRACT**

*In a communication system, particularly digital communication systems, the accuracy of information between sender and receiver should ideally be the same. However, real field conditions is not an absolute condition occurs due to the influence of interference or noise on the transmission channel. The effect of interference or noise can cause damage to the information sent from the transmitter to the receiver. One way to overcome the damage of such information can be done by using a coding system. This coding system is widely used in communication systems, especially digital communications system. One method of encoding that can be utilized is the Turbo Encoder and SOVA Decoder.*

*This final analysis aimed at the effect of different origin are used to determine the video system optimization using Rayleigh and AWGN channel. As basic research in this thesis is H.263 which has been studied and observed, but not simulated in this final, but only simulates the Turbo Encoder and SOVA Decoder. The parameters will be used in this thesis is the value of PSNR (Peak Signal to Noise Ratio), MSE (Mean Square Error), range PSNR, MSE range, and the MOS (Mean Opinion Score).*

*From the simulation results obtained that the average PSNR values as a whole with the encoding process is 58.668 dB, while with no coding 57.818 dB. The average value of MSE through the encoding process is 0.0001098, while with no coding 0.000134. Average PSNR range with the coding process was 1.53 dB, while with no coding 3.34 dB. The average range of the MSE with the encoding process is 0.0000094, while with no coding 0.000116. MOS values obtained with the encoding process is 4.11, while with 3.78 with no coding.*

**Keywords:** *Turbo Encoder, SOVA Decoder, PSNR (Peak Signal to Noise Ratio), MSE (Mean Square Error), range PSNR, MSE range, and the MOS (Mean Opinion Score).*