

## ABSTRACT

The multipath fading phenomenon is one of the main characteristic in wireless system that could decrease the performance and capacity of the system. To solve this problem, a simple system that provide good performance is needed. Layer, a new system implemented into MIMO is basically the strategy of symbol delivery on the transmitter antennas to solve the multipath fading problem. This system offers a better performance and capacity on the bad channel condition.

This Final Assignment analyses the performance of *Layer MIMO*, where on this system has 3 layers that will be compared the performance. These *Layer MIMO* are modelled into *Rayleigh* distributed mobile propagation channel, in correlated and uncorrelated condition with different user's speed.

The result of simulation shows that to reach BER  $10^{-4}$  on the correlated channel with  $0,1 \lambda$  spacing, need  $E_b/N_0$  compensation about 1 – 7.1 dB,  $0,5 \lambda$  spacing need  $E_b/N_0$  compensation about 0 – 4.6 dB,  $1 \lambda$  spacing need  $E_b/N_0$  compensation about 0.1 – 3.1 dB.

Keywords: MIMO, *Space Time Coding*, *Spatial Multiplexing*, *Layer*, *Correlated*

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