ABSTRACT

The human brain is one organ that is essential for our body. Behavior, emotions, memory, learning, thinking and imagination that we naturally occurs in the brain, especially the prefrontal or Pre Frontal Cortex. Thus, it is imperative for us to maintain the condition of the brain so that each function can be run well.

The technology that works to check brain health condition at this time is not so few and very expensive. A common tool used which is EEG (Electrochepalography) which utilizes signals alpha, beta and theta as well as methods of Wavelet. In this system, there had a comparison for how much brain affected by signal from 4G technology and normal condition using the signal obtained from the results of brain mapping then compared with the data before it and stored into the database as for comparison with the result of the images that will be received next. The simulation will be done in Matlab by using 30 data.

The result of the system simulation is 83,3% accuracy, for the minimun computational is 0,6 second and maximum is 2,3 second. And the result of this Final Project is to be developed well in the future and can be put in the good realization.

Keyword: *Theta, Delta, Wavelet*, EEG