

## ABSTRACT

Ultra Wideband (UWB) is a wireless communication used as Wireless Personal Area Network (WPAN), occupy a very large bandwidth 500 MHz, resulting from extremely short duration pulse.

Performance of direct sequence UWB receiver is greatly effected by the successful of code acquisition and tracking. Its process trying to get the same code also in a phase and hold the code between transmitter-receiver. Correlation between the receive signal and the local code in asynchron phase condition will cause bad performance of DS-UWB receiver system.

This final project will describe the process of acquisition and tracking code in receiver by simulate the process using Matlab *M-file*. Acquisition methode that will be used is serial search coherent, and non-coherent Delay Locked Loop for tracking system. The simulation result shows that the acquisition-tracking system performance is affected by some parameters such as utilized threshold levels, noise power, increasing of user interferences, and the SNR value. DS-UWB receiver getting success acquisition  $0.2 \mu s$ , it took place the worst scenario AWGN. Increasing of users , making system get worse. Tracking performance depends on using BPF and loop filter that could giving convergences' time to reach the liniarity of VCO about  $2.4 \mu s$  , within representation by error respon signal close to 0 dB. Performance of code tracking system described by pdf curve showing the probability system in a synchronize condition. When SNR 5 dB, AWGN just 9.4 % system will be losed from tracking code.

*Key code : ultra wideband, acquisition, tracking, synchronization, serial search, DLL*