

## ABSTRACT

The research conduct in this final assignment is referring to the IEEE standard 802.15.4a. This standard is high speed wireless communication standard which own a broad bandwidth in which the used of frequency for indoor radio propagation application is in 3,1-10,6 GHz. This final assignment designed by using Finite Difference Time Domain (FDTD) method and absorbing boundary condition using Perfect Matched Layer (PML-Berenger) to simulate the indoor Ultra Wideband radio propagation where the modeling building is Lengkong 2 Mosque. The sampling area taken is direct, specular, difuse and complex components at unshadowed and shadowed condition.

The simulation result of 2D is a visualization of electromagnetic wave motion and electromagnetic field distribution at each cell. The mode used is TE Mode (Ex, Ey, Hz). From the distribution of electromagnetic field result, we could find the pointing power at the sampling coordinate which latter compared with the existing indoor UWB radio propagation theory.

Keywords : FDTD, PML-Berenger, Propagation radio indoor, UWB