# ABSTRACT

Ground Penetrating Radar (GPR) is one type of radar that is used to detect an object which is buried on the gound without having to dig it. GPR antenna sends electromagnetic signals into the ground and then touches objects or targets to produce reflected waves which are then received by the receiving antenna.

Signal processing carried out includes A-scan, B-scan, and C-scan. In A-scan, one-dimensional vertical GPR scanning is performed. On B-scan signal processing from A-Scan carried out so that signal data is obtained in 2 dimensions vertically from the ground. In the C-scan stage, signal processing of some B-scan information is carried out to estimate the soil object profile data so that signal processing in the form of 3 dimensions is obtained.

In this Final Project, the detection process of underground pipes is carried out using C-scan-based signal processing in GPR. The depth of the object is 15 cm, 20 cm and 25 cm. The distance between the transmitting antenna and the receiving antenna is 5 cm, 10 cm, 15 cm and 20 cm. center frequency 600 Mhz and object diameter 10.16 cm. C-Scan signal processing includes combining B-Scan signals, interpolation and cutting x and z axis.

Keyword : GPR, C-Scan, Signal Processing