

## ABSTRACT

Ground Penetrating Radar is kind of radar system that used on detecting buried object with certain depth without digging the soil. Detection process is done by spread out electromagnetic pulse that traveled downward on the soil and reflected by object. GPR system consists of transmitter shaped of antenna that connected with impulse generator, and receiver shaped of antenna that connected with survey result data processing unit.

The purpose of processing GPR survey result data is to wish for underground condition image which can be interpretation by user. Data processing is consists of A-Scan, B-Scan, and C-Scan.

Seem the importance of data processing in GPR system, it become a must to GPR system to apply data processing furthermore. Once of the problem in GPR system is how to identification and interpretation GPR survey result data correctly. To overcome this problem it is needed data processing method that able to identification and interpretation correctly. By some B-Scan image processing stage, the first is alignment analysis to return the shifted image position. Then it is filtered by certain mask to get information about the changing of high frequency on horizontal direction and be clarified by morphological operation in pre-detection stage. The last stage is analyzed the horizontal distance and the depth of the object by column summation analyzing in distance detection and determination stage so it can be determined the information about the object correctly, the information cover depth and horizontal distance from original point survey.

**Key words:** GPR, B-Scan, Alignment, Pre-detection, Detection, Distance Determination