

ABSTRACT

In this final task, writer design software that can detect underground object's size from B-Scan data that come from GPR scanning process. Size that detecting here is object's wide, the longer vertical and horizontal dimension of the underground object. By finding underground object's size, user can estimate location where to digging soil without broken vital underground objects. Besides that, this final task continued from GPR researches that have done before.

Input from this software is B-Scan data in ASCII format which conversion result from B-Scan data in Geozondas format from GPR scanning process. Conversion process use software from PT. Dua Empat Tujuh (Solusi 247), company where data acquisitions take place. B-Scan data is two dimension data from received signal GPR and consist of A-Scan data that collect become one. B-Scan processing in this software divides into three step, Load File, Bordering, and Detection. In Load File, ASCII data read and convert into 0-255 interval that suit to eight bit gray image structure, the save it in form *.mat. Then, Bordering make limitation between sandbox, sand, and air from *.mat data image. And the last is Detecting step which detect object, remove clutter, and find the size.

After design finished, this software test into nine objects, there are square, triangle, and circle that each have big, medium, and small size. Test result shows that three object's size undefined; there are small triangle, medium circle, and small circle. One object undetected, there is big circle. And from five other objects, the accuracy of object's wide detection is 92.6%, the accuracy of horizontal size dimension is 66.47%, and the accuracy of vertical size dimension is 90.58%. From the mean of that accuracy, writer get the software accuracy is 83.22%

Keywords: GPR, B-Scan, Object's Size Detection