

UNIVERSITI TEKNOLOGI MARA

**ACCURACY ASSESSMENT OF GROUND
PENETRATING RADAR DATA IN VARIOUS
SOILS**

FATIN HAMIZAH BINTI HISHAM

Thesis submitted in fulfillment
of the requirements for the degree of
Bachelor of Surveying Science and Geomatics (Honours)
(AP220)

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AUTHOR'S DECLARATION

I declare that the work in this dissertation was carried out in accordance with the regulations of Universiti Teknologi MARA. It is original and is the results of my own work unless otherwise indicated or acknowledged as referenced work. This thesis has not been submitted to any other academic institution or non-academic institution for any degree or qualification.

I, hereby, acknowledge that I have been supplied with the Academic Rules and Regulations for Post Graduate, Universiti Teknologi MARA, regulating the conduct of my study and research.


Name of Student : Fatin Hamizah Binti Hisham

Student I.D. No. : 2017800154

Programme : Bachelor of Surveying Science and Geomatics
(Honours) – AP220

Faculty : Architecture, Planning, and Surveying

Thesis : Accuracy Assessment of Ground Penetrating Radar
Data in Various Soils

Signature of Student : 

Date : August 2020

ABSTRACT

The usage of Ground Penetrating Radar (GPR) nowadays has become remarkable in detecting embedded objects underground, especially utilities that have been installed. The analysis from data collected can determine the position and type of buried item. However, data accuracy might not be accurate. Therefore, this aim of the study is to investigate the accuracy assessment of GPR. Concerning achieve the aim, the objectives are to study the accuracy of various soils for GPR radargram and to identify the best signal processing for accuracy in GPR data. The collection of data using MALA GPR. This study conducts the accuracy analysis of GPR data depending on various soils. From this study, the best signal processing for accuracy in GPR can be identified. The method used to do accuracy assessment is by using SNR, NRMSE, and RMS Velocity for every single processing filter. As a result, all processing steps are necessary to obtain a better result of tolerance.

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