UNIVERSITI TEKNOLOGI MARA

ASSESMENT OF DIGITAL TERRAIN MODEL (DTM) GENERATE FROM UAV AERIAL IMAGE USING PHOTOGMMETRIC IMAGE PROCESSING MODULE

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Thesis submitted in fulfillment
of the requirements for the degree of
Bachelor of Surveying Science and Geomatic (Hons)

Faculty of Architecture, Planning and Surveying

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AUTHOR'S DECLARATION

I declare that the work in this disertation 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.

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ABSTRACT

The Digital Terrain Model (DTM) were presented about bare surface of the earth. It is produce DTM from data Unmanned Aerial Vehicle (UAV). However, the lack of processing will caused error and the result produce erroneous DTM result(Zietara, 2017). Therefore, this study to assess the accuracy of the Digital Terrain Model (DTM) on a map generated from UAV Aerial Images in Uitm Arau,Perlis. The objective of this study to apply the photogrammetry image processing process in production of Digital Terrain Model (DTM) using UAV Aerial Image and to analyze accuracy of Digital Terrain Model (DTM). These images were processed using Agisoft Photoscan. Eight (8) point were placed as Ground Control Point (GCP) and coordinate measured using static method using Trimble R6 GPS instruments. Besides,30 station of check points were establish at this area through the method GPS RTK net in order to determine accuracy of Orthophoto and DTM. The overall result of DTM are between 7m to 40 m.The result for mapping accuracy assessment based on RMSE, which is the error shoud below than 0.2meter for xy Coordinate and for vertical below than 0.4meter. The final result of this research show that the DTM are processing in 3 different method processing. There are unclassify, random classify and classify. The accuracy of DTM coordinate differential between map and survey check point were analyzed In conclusion, the Digital Terrain Model (DTM) are processing from UAV Aerial Image that can be use for surveyor to analyse the elevation of earth. This is because UAV can generate accurate of DTM.

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