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RELIABILITY STUDY OF UAV PHOTOGRAMMETRY FOR SLOPE MAINTENANCE IN NAKA, KEDAH

MOHD FADHILAH BIN AZRI

BACHELOR OF SURVEYING SCIENCE AND GEOMATICS (Hons)

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AUTHOR'S DECLARATION

I declare that the work in this thesis 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.

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Name of Student	:	Mohamad Fadhilah Bin Azri
Student I.D. No.	:	2016669204
Programme	:	Geomatics Bachelor in Surveying Science and Geomatics (Honours)
Faculty	:	Faculty of Architecture, Planning and Surveying
Thesis	:	Reliability Study of UAV Photogrammetry for Slope Maintenance in Naka, Kedah
Signature of Student	:	
Date	:	August 2020

ABSTRACT

Unmanned aerial vehicles (UAV) applications have been progressed and developed steadily from time to time particularly for mapping applications. Also, UAV is the one of the solution to manage a project within time constraints and using less worker compare to method that using the satellites or unmanned aircraft with more flight costs, a long time to conduct and weather-dependent for data collection, restricted in deploy the equipment, limited in flying time and the resolution of ground is low in the mapping process. Moreover, the 3D model can be created by applying digital image processing using a UAV image. In civilian and industrial applications, there are already using the UAV and with today's technology, UAV can be used in many various applications. For instance, the UAV has been widely used in forest-fire monitoring, modeling of the building, and slope mapping. road monitoring, vehicle detection, disaster management. However, its uncertainty about how much accuracy data from UAV compare to the data from ground method especially when it comes to the estimate the volume in slope area. For this purpose, this study focuses on to make a comparison of volume using topography data and UAV application for slope maintenance. The study area for this research is will be in Naka, Kedah. The data of topography will be collected by using the Global Navigation Satellite System (GNSS) device and for the UAV, aerial images from the drone will undergo processing to get the digital elevation models (DEM) data. Based on this data, the analysis will be made for these two types of data. In the end, this study can help to determine how accurate the volume estimation between topography data and UAV based DEM.

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