UNIVERSITI TEKNOLOGI MARA

ACCURACY ASSESSMENT OF 3D BUILDING HEIGHT EXTRACTION FROM UAV IMAGES WITH DIFFERENT FLYING ALTITUDE OF UITM PERLIS

MOHAMAD FARIS BIN JAMAIN

Thesis submitted in fulfillment
of the requirements for the degree of
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Faculty of Architecture, Planning and Survey

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AUTHOR'S DECLARATION

I declare that the work in this thesis/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	:	Mohamad Faris Bin Jamain
Student I.D. No.	:	2015663788
Programme	:	Bachelor in Surveying Science and Geomatics-AP220
Faculty	:	Architecture, Planning and Survey
Thesis	:	Accuracy Assessment of 3D Building Height Extraction from UAV Image with Different Flying Altitudes in UITM Perlis
Signature of Student	:	……..
Date	:	July 2018

ABSTRACT

Nowadays, there are various technology are created to facilitate human movement and work. Until the UAV creation capable to replaced previous photogrammetry technique. There are many UAV application currently in sync with time circulation such as military, aerial surveillance, monitoring and survey mapping. Besides of the orthophoto production, the 3D model reconstruction is also the one of the UAV application. Starting from aerial photography, the processing phase until 3D modelling is done by using software. Hence the 3D model also should be performed by the accuracy assessment to evaluate how far the similarity if compared with the ground measurement and also actual building. The purpose of this study is to describe the accuracy assessment of 3D model height extraction from UAV images with different flying altitude in UITM Perlis. There are several important building blocks selected for 3D model production. After going through several phase of 3D models production, the height of the building is compared to the ground measurement value to ensure the height of the building is same as the actual building height. Other than that, the height of 3D buildings that measured from different flying altitude are also assessed. The results of this study show that 3d model produced by the UAV image is able to give a similar height to the field measurement as well as the actual building. This result suggests building measurements can be done using this method.

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