

UNIVERSITI TEKNOLOGI MARA

Assessment of Mapping Production Between Fixed-wing And Multi-rotor UAV Platform

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requirements for the degree of
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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.

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ABSTRACT

UAV photogrammetry defines a photogrammetric assessment system that works remotely monitored, without a driver sitting in the car semi-autonomously or autonomously. The platform is ready with a photogrammetric size scheme, which involves a digital camera, heat or infrared digital camera technology, but no longer restricted to tiny or medium video. There are several types of UAV platforms namely multi-rotor and fixed-wing UAV. The aim of this study to analyze the assessment of mapping production from data acquisition using different UAV platforms. The objectives of this study are to generate orthophoto and DEM from the data image that gets from fixed-wing and multi-rotor UAV, to evaluate orthophoto and DEM processes from the image obtained from the fixed-wing and multi-rotor UAV and lastly to analyze the mapping accuracy of orthophoto from data image fixed-wing and multi-rotor UAV. The study area for this study at Universiti Teknologi MARA (UiTM) campus Arau, Perlis. There are four phases of methodology for this study which is planning, data collecting, data processing and the last is result and analysis. The image is collected using Skywalker fixed-wing and multi-rotor Dji Phantom 4 Quadcopter. Based on this study, the result of the fixed-wing imagery provided better orthophoto and provided a better representation of vegetation and building compare to the image from multi-rotor UAV that has some distortion. The RMSE for fixed-wing UAV is 0.160m and for multi-rotor is 0.300m.

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