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ASSESSMENT OF ORTHOPHOTO GENERATED FROM UAV IMAGES

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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.

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ABSTRACT

Unmanned Aerial Vehicle (UAV) has succeeded in attaining a position in the aerial image survey as a cheaper and more effective for 3-dimension-modelling compared to traditional photogrammetry and Light Detection and Ranging (LIDAR). Besides that, the utilization of UAV photogrammetry software is important in giving he highest accuracy for orthophoto production. This research will compare two different analysis on orthophoto. The project aims to assess the accuracy of plane coordinate on a orthophoto generated from aerial images. There are 8 GCP (Ground Control Points) that are spread throughout the study area that is measured with the static method by using a Trimble R6 and Topcon GR5. For the VP (Verification Points), there is 30 points in total that is observed with Topcon GR5 by using the RTK (Real Time Kinematics) method. 293 UAV images were used in this research and the UAV images were processed by using the Agisoft PhotoScan software. The processing phases involved were photo alignment, geo-referencing, dense points cloud and mesh, texture model, Digital Elevation Model (DEM) and orthophoto. The assessment on the accuracy of the software was based on both quantitative and qualitative analysis. The quantitative analysis includes points and distance measurement that used the RMSE method for accuracy, while the qualitative analysis was used on the quality of the images. The final result of research shows that the data from UAV is more superior to the other data sources. Besides, the data from the UAV also can be used in other surveying use. In conclusion, the UAV data can be effectively applied in the surveying industries which provide efficient and effective practices for all sorts of survey

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