UNIVERSITI TEKNOLOGI MARA

EVALUATION OF DEM ACCURACY FROM UAV AND TANDEM-X IMAGERY IN UiTM PERLIS

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AUTHOR'S DECLARATION

I declare that the work in this 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 academic institution or non-academic institution for any degree 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

Digital Elevation Model (DEM) is the common medium in analyzing the surface of the earth. The quality of DEM able to give information according to the applications that is need to be carried out. Nowadays, the use of Unmanned Aerial Vehicle (UAV) has become one of the famous equipment used in analyzing and monitoring the surface of the earth. The specifications of UAV gives user a high accuracy in monitoring the surface of the earth. Not only UAV, the development of satellite image also able to give the surface information of the earth same level as UAV. The new development of satellite image that is TanDEM-X has become one of the researchers' favorite data in analyzing DEM accuracy. For this research, a study is carried out in analyzing the DEM accuracy in between UAV and TanDEM-X imagery in UiTM Perlis. In analyzing DEM accuracy, there are few factors that will be measured especially the ground control measurement. The processing phase is carried out by using two types of software according to the two types of data that are UAV and TanDEM-X images. This research will be analyzed based on the Root Mean Square Error (RMSE) value of the verification points. The result were then to be compared the elevation value with the extraction elevation value TanDEM-X. Furthermore, this research will be analyzed the structure of the DEM from both data by using Triangulation Irregular Network (TIN) method. The result of this research will show the comparison of the elevation value in between UAV and TanDEM-X and its visualization.

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