UNIVERSITI TEKNOLOGI MARA

ASSESSMENT OF PLEIADES SATELLITE IMAGE FOR MANGROVE CLASSIFICATION

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Thesis submitted in fulfillment
of the requirements for the degree of
Bachelor of Surveying Science and Geomatic (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.

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

Recent developments in high resolution remote sensing have created a wide array of potential new mangrove applications. In this study the concept of Pleiades is applied to mapping and exposes the current system developments and spatial industry needs to delineate individual tree canopy. By exploring developments in a Pleiades technology and investigating the use of the technology in mapping, a lot of advantages for spatial industry have been explored. Along advancements in technology, there were various methods have been developed to delineate individual tree canopy. The Pleiades image which is 0.63 m resolution was used. The study area was covered in mangrove are at Bagan Datuk, Perak.

The major research strategy used in this project, are detecting, classify, and analyze the classification on mangrove family. Segmentation and classification approach were developed for this delineation canopy in the study area. Method that being used are Support Vector Machine (SVM) and K-Nearest Neighborhood (K-NN) that being apply in Object Based Image Analysis (OBIA). The information was used to identify individual tree canopies and delineated their boundaries. The results of segmentation and classification were used to know which classifier have the highest accuracy assessment in the study area that correspond with the result images obtained. This research show that SVM has the highest accuracy with 63.8156% overall accuracy and 0.5513 kappa coefficient better than K-NN that has 59.8303% overall accuracy and 0.5018 kappa coefficient.

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