Integrating satellite temporal analysis for urban morphology study in Melaka

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Abstract

The main objective of this paper is to analyse the changes in land use at Melaka city by different of interval times, which are 1993, 2005 and 2015. Morphology study can be obtained by conducting an analysis through using remotely sensed imagery from SPOT satellite images that offers a great opportunity for measuring and describing the urban morphology. Three classes of land use; built up, green area and water bodies, were successfully classified by using supervised classification method. The changes and expansion of Malacca city in land use changes within 22 years become tremendously develop. Overall accuracy assessment achieved 75% above and the changes of each class were quantified by MapInfo Professional. Built-up area increased from 47% to 56% at the year 1993 and 2005. But then, decreased to 53% in 2015. As for the green area, it significantly increasing from 39% to 41%. Meanwhile, water bodies were decreased because more development happened along the Sg Melaka and Malacca Strait. In conclusion, by monitoring the land use changes in the historical city, it would be a greater help for researcher and authority to control the development of the city in order to create a resilient and sustainable city that offers a good life quality to people.

Indexed keywords

Engineering controlled terms: Land use, Morphology, Remote sensing, Satellite imagery

Engineering uncontrolled terms: Historical cities, Overall accuracies, Remotely sensed imagery, Satellite images, Supervised classification, Sustainable cities, Temporal analysis, Urban morphology

Engineering main heading: Quality control
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