

## Landcover mapping and spectral analysis using multi-sensor satellite data fusion techniques: case study in Tioman Island, Malaysia

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**Abstract:** This paper describes an assessment of landcover mapping using multi sensor satellite data of SPOT 5, panchromatic and hyperspectral, for Tioman Island, Malaysia. The study area is known to be one of the best Islands in South East Asia for its unique collection of diversified coral reefs and serves host to thousands of tourists every year. Land cover classification was done using hierarchical classification schemes. Decision tree classification method was implemented to separate level I main land cover classes i.e. water, habitation and vegetation followed by maximum likelihood supervised classification method for level II classification. The accuracy of the classification result is evaluated by a test sample set, which is selected based on the field survey. The overall accuracy of the final classification result obtained was 92.25% with the kappa coefficient as 0.8940.

**Keywords:** Land Cover, Multi-spectral Segmentation, Pixel-Based Classification, Decision Tree Classification