APPLICATION OF UNMANNED AERIAL VEHICLES FOR URGENT LANDSCAPE CLASSIFICATION

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ABSTRACT

The study of unmanned aerial vehicles for urgent landscape classification was conducted using GeoEye, which has a high fidelity camera as well as the unmanned aerial vehicle. The study is divided into 3 parts: Part 1) the use of materials, equipment, and software, Part 2) Aerial Photography Accessing and Part 3) processing and analysis to assess the accuracy of identifying landscape and photo accountability level. The acquired photos from the unmanned aerial vehicle were compared with satellite imagery from GeoEye.

The findings indicated that the landscapes identified by the unmanned aerial vehicle determined the entire area was 618,915.13 square meters, comprising buildings, car parks, roads, bicycle lanes, green areas, sport fields, water sources, sidewalks, and other areas as follows: 115,499.87, 22,717.90, 72,789.83, 5,680.60, 186,447.14, 44,444.22, 31,314.34, 11,597.95, 128,423.28 square meters, respectively. The total area including overlapped areas was 46.56%, overall accuracy of the landscape classification was 86.66% and Kappa Index equalled 0.84. The Kappa Index was in the 0.81-0.99 in the almost perfect agreement level.

KEY WORDS: UNMANNED AERIAL VEHICLES (UAV) / PHOTOGRAMMETRY / GEOMETRIC CORRECTION

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