3D Reconstruction of University of Ilorin Campus Using High Resolution Satellite Imagery and Conventional Survey

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Key words: Cartography; Geoinformation/GI; Spatial planning; 3D Mapping; Spatial Analysis

SUMMARY

This paper presents the production of a 3D map of the University of Ilorin Main Campus to provide accurate spatial information database to enhance adequate planning and maintenance of infrastructural development. Geometric data (spot heights and building elevations) were acquired using Trimble M1 Total Station and Global Positioning System (Hi - Target). From high resolution (0.6 m) Google Earth image of the study area, building footprints and road network were vectorized to produce 2D map while the attribute data were obtained through social survey by means of oral interview and visual inspection. The data collected were processed in ArcMap 10.6 and Surfer 15 environments to generate data products. Using the building footprint and the building height measured with Total Station, the 3D map was generated. Spatial analyses, such as queries and network analysis, were executed to demonstrate some key infrastructural management issues this work will be useful for.

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