



The effects of production steps on accuracy of digital Orthoimages

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Abstract: The production of digital orthoimages (DOIs) has become common due to the development of more powerful computers with sufficient resources, easier acquisition of input data, increased generation of digital data, development of many commercially available orthoimage production systems, and new application areas, particularly in connection to geographic information system and digital mapping. A significant segment of the user community is concerned about the accuracy of DOIs which depends on the parameters and steps involved in their production. This paper presents the significance of the effect of varying the number of ground control points (GCPs), the grid interval of digital elevation model and scale corresponding to different pixel sizes on the planimetric accuracy of DM. Digital photogrammetric software was used to generate DOIs for analysis. The analyzed results showed that a variation in the number of GCP had significant effect on the planimetric accuracy of the final DOI compared with the variation in DEM grid interval and scale of the images. The resulting orthoimage maps can be readily integrated into existing GIS for 3D surface visualization and spatial analysis.

Keywords: Accuracy, Digital Photogrammetry, Digital Terrain Model, Orthoimages, Orthorectification