

## **An Investigation of Direct and Indirect Geo-Referencing Techniques on the Accuracy of Points in Photogrammetry**

**Authors :** F. Yildiz, S. Y. Oturanc

**Abstract :** Advances technology in the field of photogrammetry replaces analog cameras with reflection on aircraft GPS/IMU system with a digital aerial camera. In this system, when determining the position of the camera with the GPS, camera rotations are also determined by the IMU systems. All around the world, digital aerial cameras have been used for the photogrammetry applications in the last ten years. In this way, in terms of the work done in photogrammetry it is possible to use time effectively, costs to be reduced to a minimum level, the opportunity to make fast and accurate. Geo-referencing techniques that are the cornerstone of the GPS / INS systems, photogrammetric triangulation of images required for balancing (interior and exterior orientation) brings flexibility to the process. Also geo-referencing process; needed in the application of photogrammetry targets to help to reduce the number of ground control points. In this study, the use of direct and indirect geo-referencing techniques on the accuracy of the points was investigated in the production of photogrammetric mapping.

**Keywords :** photogrammetry, GPS/IMU systems, geo-referencing, digital aerial camera

**Conference Title :** ICAMIT 2014 : International Conference on Aviation Management and Information Technology

**Conference Location :** Singapore, Singapore

**Conference Dates :** September 11-12, 2014