AIRBORNE UAV REMOTE SENSOR POSITION ACCURACY ALGORITHM IN CATASTROPHES ZONES

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Abstract

Sensor payload calibration and FOV are still the most essential parameters in Airborne Remote Sensors for developing quality terrain images in the Remote Sensing field. UAVs are core devices in Airborne Remote Sensing by carrying camera payload for large terrain objects to achieve desired image quality with geographical position provided for different available flight planning algorithms. This paper proposes the algorithm to find the exact Geo-coordinates for UAV navigation algorithm viewpoint identification for implementing Airborne Remote Sensing (ARS) to study Landslide Susceptibility Zone as well as application for catastrophe analysis. Terrain Slope and Aspect was considered using Remote Sensing products from ISRO CartoSat and NASA ASTER satellite available in the Digital Elevation Model (DEM) construction to maintain the calibrated angle of vision, field of vision, and land surface image quality.
This algorithm will enhance the functioning of various available UAV Flight Planning Algorithms to improve the quality of 3D topography images for 3D Modeling as well as Landslide and Flood Prediction and Analysis, as well as provide the position of camera payload and tilting angle for enhanced terrain images.

Keywords: ARS, ISRO, DEM, LISS III, LSI, SI, LRI, OSM, NDVI,VI