

INTISARI

Pembangunan infrastruktur bangunan memerlukan pemantuan dan pengendalian progres selama proses pengerjaan lapangan, agar hasil dari proyek yang dikerjakan sesuai dengan rencana bangunan yang digambarkan pada *Shop Drawing*. Pemantaun progres pembangunan infrastruktur air diperlukan teknologi yang dapat memetakan kondisi waduk secara teliti dalam waktu yang cepat dengan biaya yang lebih ekonomis, oleh karena itu digunakan teknologi PUNA dalam pemetaan hasil pembangunan Waduk Gondang Kabupaten Karanganyar Provinsi Jawa Tengah.

Pelaksanaan penelitian ini mengolah data foto udara dengan *software Agisoft Metashape Professional* yang dilakukan dengan tahapan rangkaian diantaranya yaitu *align photos*, identifikasi GCP, *build dense cloud*, *build mesh*, *build texture*, *build DEM*, *build orthomosaic*. Tahapan setelah mendapatkan data DEM maka dilakukan *filtering* data DSM menjadi data DTM dengan menggunakan *software PCI Geomatica* untuk data dasar perhitungan volume penampungan air Waduk Gondang dan pembuatan kontur serta *hillshade* dalam penyajian peta topografi.

Berdasarkan hasil analisa hasil interpretasi terhadap orthofoto diketahui terdapat bangunan kantor pengelolaan Waduk Gondang yang berada di sisi utara tanggul, vegetasi disekitar batas penampungan air, dan pemukiman warga. Orthofoto Waduk Gondang yang dihasilkan memiliki ketelitian horisontal (CE90) 0.184 meter dan ketelitian vertikal (LE90) 0.390 meter sehingga masuk ke dalam kelas 1 ketelitian foto udara pada skala 1:3300 berdasarkan Perka BIG Nomor 15 Tahun 2014 Tentang Pedoman Teknis Ketelitian Peta Dasar.

Kata kunci: foto udara, volume waduk, ketelitian geometri

ABSTRACT

The construction of building infrastructure requires monitoring and controlling progress during the fieldwork process. The results of the projects carried out are following the building plans described in the Shop Drawings. Monitoring the progress of water infrastructure development requires technology that can accurately map reservoir conditions quickly with more economical costs. Therefore UAV technology is used in mapping the results of the construction of the Gondang Reservoir, Karanganyar Regency, Central Java Province.

The implementation of this research processes aerial photo data with Agisoft Metashape Professional software, which is carried out in a series of stages, including aligning photos, GCP identification, build dense cloud, build mesh, build texture, build DEM, build orthomosaic. The steps after getting the DEM data are filtering the DSM data into DTM data using PCI Geomatics software for the basic data for calculating the Gondang Reservoir water reservoir volume and making contours and hills shades in the presentation of topographic maps.

Based on the results of the analysis of the interpretation of the orthophoto, it is known that there is an office building for the management of the Gondang Reservoir located on the north side of the dam, vegetation around the boundary of the water reservoir, and residential areas. The resulting Orthofoto Gondang Reservoir has a horizontal accuracy (CE90) of 0.184 meters and a vertical accuracy (LE90) of 0.390 meters so that it is included in class 1 aerial photography accuracy at a scale of 1:3300 based on Perka BIG Number 15 of 2014 concerning Technical Guidelines for Accuracy of Base Maps.

Keywords: aerial photography, reservoir volume, geometric accuracy