ABSTRACT

Remote sensing is a science which is used to get information of desired place or object with data analysis that is obtained by using media or equipment without any contact with the area or object directly. Remote sensing is a part of geography science related to image interpretation. Image that has been developed for stereoscopic observation is aerial photography. Stereoscopic observation in the stacked image pairs can produce three-dimensional picture for certain image types.

In this final project, there will be presented three-dimensional reconstruction technique stereo color aerial imagery by using a method that is owened by parallax stereoscopic and mathematic morphology. Digital image that is obtained is the stereo image model of plane geometry, the form of blocks, prisms, spheres, and cylinders. Digital image that is obtained, then it is passed into the morphology filter color to do the form selection process. The process of filtering color product the skeleton morphology and structure information geometry digital image which is analyzed further by using parallax stereoscopic formula. The result of morphological filters and analysis use the parallax formula that is obtained. It is expected to produce a 3D reconstruction in accordance with the actual situation.

Based on the results of the test and measurement, required ratio of the shift of cameras with a minimum flew height about 1:8 so that the obtained average accurancy can be achieved around 99,93% with the correction factor of digital camera is 0.02552093501942 cm / pixel. Effect of different shape, height, and rotation of objects are very have affects for the level of accurancy.

Key words : 3D reconstruction, parallax stereoscopic, mathematic morphology.