ABSTRACT

THE EARLY IDENTIFICATION SYSTEM FOR AERIAL CONDITION BASED ON CORRELATION OF VIDEO SENDER AND GPS COORDINATES ON *VERTICAL TAKE-OFF AND LANDING UNMANNED AERIAL VEHICLE* (VTOL UAV)

By

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Globalization and improvement of human life encouraged the advancement of technology especially in machinery's sector. Therefore, the more human with each passing day used motorcycle, car, and industry engines which could increase the air pollution. This research discussed about *" The Image Segmentation for Infrared Image of Environmental Condition Based on Wavelet Transform"* which had major effect in doing this research. This research used an Unmanned Aerial Vehicle (UAV) quadcopter which carried a payload liked camera which would send the video data by video sender device. Then, the picture would be captured and processed by GCS (Ground Control Station) software. The capturing from camera also would be integrated with captured GPS coordinates data from Unmanned Aerial Vehicle (UAV) when it was in Loiter Time. The trial of this research consisted of video sender test-connection system with GCS (Ground Control Station) software, the distance dispatching test of video sender 5,8 Ghz , GPS accuracy test, picture capturing test with the camera angles as big as 180^o and 30^o and also captured test on vehicle's pollution. The result of those trials were the distance of video sender dispatch was not more than 430 m, the accuracy of GPS ± 2m, and the average matrix of image capturing and processing would be suitable with the pollution intensity which was gotten.

Keywords : Pollution, Image Processing, Video Sender, GPS, UAV.