

In the present Era, there are too many developments in the field of drones. Besides, the military and commercial applications of drones, there is no doubt in their efficiency in case of supporting emergency disaster operations. It focuses mainly in emergency operations, like activity immediately after the occurrence of a disaster like nuclear accidents, dangerous material releases, floods, earthquakes. For special rescue teams, the drone can help much in a rapid location selection, detecting real time situation, counting number of people or males and females. Floods are typical for a slow onset disaster. In contrast, managing floods is a very complex and difficult task. It requires continuous monitoring of dykes, flooded and threatened areas. Drone can help managers largely keeping an area under observation. Drone can be used for fire detection, intervention monitoring and also for post-fire monitoring. In case of nuclear accident or hazardous material leakage drone is also a very effective or can be the only one tool for supporting emergency operations.

A quadcopter can achieve vertical flight in a stable manner and be used to monitor or collect data in a specific region such as mapping terrains. Technological advances have reduced the cost and increase the performance of the low power microcontrollers that allowed the general public to develop their own quadcopter. The goal of this project is to build, modify, and improve an existing quadcopter kit to obtain stable flight, gather and store GPS data, and perform auto commands, such as auto-landing. The project used an Aeroquad quadcopter kit that included

a frame, motors, electronic speed controllers, Arduino Mega development board, and sensor boards and used with the provided Aeroquad software. Batteries, a transmitter, a receiver, a GPS module, and a micro SD card adaptor were interfaced with the kit. The aeroquad software was modified to properly interface the components with the quadcopter kit. Individual components were tested and verified to work properly.

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