

VISVESVARAYA TECHNOLOGICAL UNIVERSITY

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A Project Report on

“GPS Based Land Survey System Using Quad-copter Unmanned Aerial Vehicle (UAV)”

Submitted in partial fulfilment of the requirement for the award of the degree of

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In

Electronics & Communication Engineering

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ABSTRACT

Quadcopter or quad rotor aircraft is one of the Unmanned Aerial Vehicle (UAV) that is of major focus of active researches in recent years, since the application of UAV and Micro Aerial Vehicle (MAV) can apply to variety of area such as rescue mission, military and others.

Compared to terrestrial mobile robot that often possible to limit the model to kinematics, Quadcopter require dynamics in order to account for gravity effect and aerodynamic forces. Quadcopter has advantages over the conventional helicopter where the mechanical design is simpler. Besides that, Quadcopter changes direction by manipulating the individual propeller's speed and does not require cyclic and collective pitch control as in case of terrestrial vehicles.

In the case of aerial vehicles along with control of the roll, yaw and pitch axes, controlling its height plays a very important role. So we are using an height stabilization algorithm to stabilize its height.

The same device is being controlled wirelessly using Xbee modules, based on the commands sent from the laptop/PC. Xbee is a technology that is widely deployed in wireless control and monitoring application. This is a transreceiver module, in our project we have a module that is being interfaced to the computer, acting as a transmitter and the other module is interfaced with the arduino that is placed on the Quadcopter, that acts as a receiver.