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CONTENTS

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INFORMATION-MEASURING SYSTEM OF UAV (QUADCOPTER) AND IMPLEMENTATION OF FLIGHT MODES BASED ON IT

In article the description of information-measuring system, a description of the working principle of sensors. Given the dependence of the functioning and implementation of the flight mode from the sensors on Board the UAV.

Today UAV's first of all are subjects of automation, this means that the drone on Board has a number of sensors to ensure a safe flight. All kind of these sensors are building the Information-measuring system (IMS).

IMS of UAV's includes:

- Altimeter, is an instrument used to measure the altitude of an object above a fixed level;
- Compass (magnetometer), is an instrument used for navigation and orientation that shows direction relative to the geographic "cardinal directions", or "points";
- Gyroscope, used for measure or maintain orientation;
- Accelerometer, is a device used to measure the corresponding acceleration;
- Ultrasonic rangefinder, rangefinder used for remote detection of various objects and measuring distance;
- The Global Positioning System (GPS), is a global navigation satellite system (GNSS) that provides location and time information in all weather conditions, anywhere on or near the Earth where there is an unobstructed line of sight to four or more GPS satellites.

Each of this sensors necessary for the implementation of flight modes such as:

- **Loiter mode** — automatically attempts to maintain the current location, heading and altitude;
- RTL (Return To Launch) mode —navigates Copter from its current position to hover above the home position;
- Land mode —attempts to bring the copter straight down;
- Auto mode – In Auto mode the copter will follow a pre-programmed mission script stored in the autopilot which is made up of navigation commands (i.e. waypoints);
- Follow Me mode – this one makes it possible for you to have your copter follow you as you move, using a telemetry radio and a ground station;
- Guided mode – this mode is a capability of Copter to dynamically guide the copter to a target location wirelessly using a telemetry radio module and ground station application.

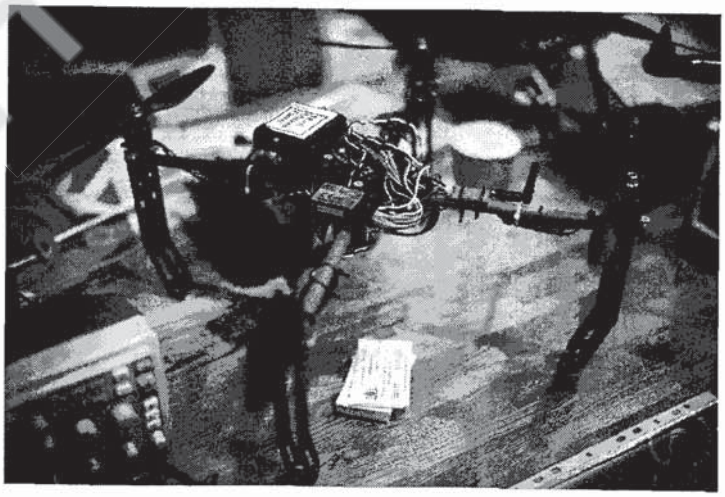

Fig.1. The appearance of the drone, assembled in the «Mechatronics Robot laboratory».

Conclusions: implementation of IMS on Board of the UAV allows to realise the flight modes and the required functionality. At the moment provides 6 flight modes.

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