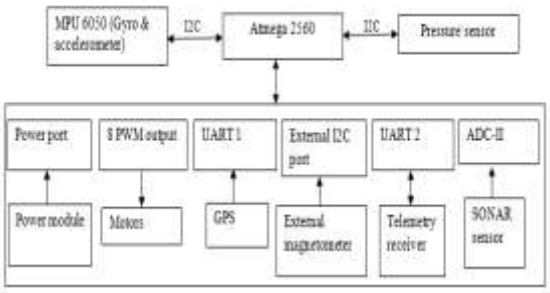
GP1010	Design and Development of Heading Direction Control in Autopilot System for Micro Air Vehicle		
Group	1. A. D. Sonali	5. Manasa	
	2. Abhishek	6. Mahita	
	3. Anudeep		
	4. Varshitha		
Department	Computer Engineering (FT-2012)		
Mentor(s)	V. Deepak and N. Chandan		

An autopilot is a mechanical, electrical, or hydraulic system used to guide a vehicle without assistance from a human being. An autopilot can refer specifically to aircraft, self-steering gear for boats, or auto guidance of space craft and missiles. A key component of modern aircraft is the autopilot system, officially referred as the automatic flight control system (AFCS), which has made the use of aircraft easier. Most of the modern autopilot systems can now handle all aspects of flight like take-off, ascent, level, decent, approach and landing.

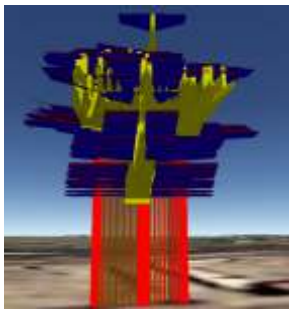
The main objective of the project is to design and develop the heading direction control system in autopilot system for MAV. In the heading direction control system different types of heading has been designed and developed like head of the MAV pointing towards home, head pointing towards next waypoint and head pointing towards location. While in flight, works as, head facing the home, head pointing to next waypoint and head facing the previous waypoint with a back trace respectively. The sonar sensor is integrated for safe landing of MAV.

The developed system is tested through the existing commands in Mission Planner software like, TAKE OFF, WAYPOINTS and LAND. In the autopilot system, the heading direction of MAV like head pointing towards home, next waypoint and location have been tested by carrying out multiple flight plans. In the mission planner, different waypoints have been assigned to check the heading direction of MAV. With the help of 3D-view flight plan the behavior of the system is analyzed. As a part of future work, features like collision avoidance, camera integration for high definition pictures and videos in real time and controlling the speed of MAV can be incorporated



Block diagram

Mission plan



3D view of Mission

MAV (Quadcopter)

Project stages