Abstract

Security of any kind today has become a key issue in our lives. We need safety for everything. Along with the safety reasons we now-a-days also require something that can be controlled remotely without manually operating it is having physically present over here. So what are the major solutions that we can have and can afford is the primary question in our minds. We all want full proof safety systems but at a low cost and ease of implementation and working. It is this very thought and this very question to which we have tried to find an answer. This paper deals with building an autonomous navigation system for a model aircraft which will control the aircraft and navigated through user define locations using GPS (Global Positioning System).
We have built an autonomous UAV i.e. an Unmanned Air Vehicle, which is not remotely operated. For navigation we are using a GPS receiver which provides current GPS locations. The way points will be provided by the user as per his requirement. The foundation of any UAV is control system which maintains a stable flight. Environmental factors which are build affect the flight greatly for aircraft control we are using a 3D MEMS ACCELEROMETER. We have used servo motors port directing the aircraft’s control surfaces. The control methodology we have used is PID based and individual PID loops are used for each of the controller surfaces. This system is very critical both in terms of functionality and accuracy. It also poses other challenges such as size, weight and power constraints on the control electronics.

References

- Web site of the I2C bus http://www.semiconductors.philips.com/buses/i2c/

Index Terms

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Keywords
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