Laser Range Finder

Objective: Use a forward pointing laser range finder to detect and avoid obstacles.

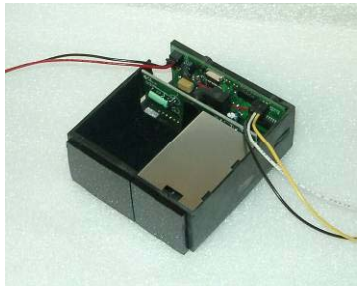
Principle Investigators: Randy Beard, Tim McLain

Sample Publication: Stephen Griffths, Jeff Saunders, Andrew Curtis, D. Blake Barber, Timothy W. McLain, Randal W. Beard, “Maximizing miniature aerial vehicles,” *IEEE Robotics and Automation Magazine*, vol. 13, no. 3, 2006 p. 34-43.

Funding Source: AFOSR.

Laser Range Finder

Opti-Logic RS400 Laser Rangefinder



400 meter range

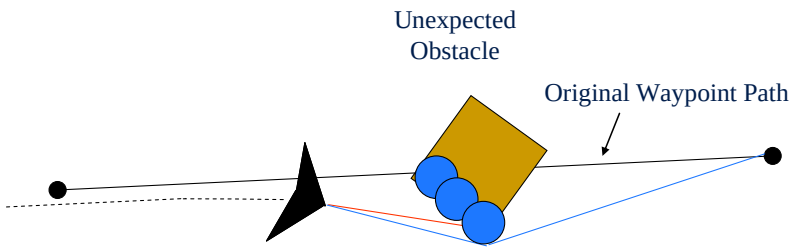
10 Hertz update rate

6 oz

1.8 Watts

Approach

1. While following a nominal waypoint path, laser detects object.
2. Upon detection, insert cylindrical object into world map and plan path around the obsticle.
3. Continue until the obstacle has been avoided.



Results

First successful flight test in 2005.

Detected and avoided a 50 meter hight building on the BYU Campus.