



Unattended Ground Vehicle

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Overview

This work started as a final project in QMCS 380 under the supervision of Dr Thomas Sturm, General Dynamics funded the project with \$10,000 with the understanding that we would participate in a competition with St. Cloud State engineering students.

The purpose of the project was to create a unattended surveillance robot from off the shelf parts. The robot was to be controlled from a remote console, out of line of sight, and to be able to mark objects with a paintball gun.



Specifics

- Maximum run time > 3 hours
- Webcam with 350° movement
- Rapid fire paintball gun that can fire 17 paintballs per second
- Can track its course using GPS
- Utilizes two Lithium-Polymer batteries to power the on board computer
- Onboard computer is a PC-104 running a Pentium III processor
- Robot ran Windows 98
- The computer interfaces with the different components on the robot through serial and USB ports
- Onboard computer acts like a server, contactable from anywhere with an internet connection
- Any computer with our client application installed can connect to the robot's server and control the robot.
- Robot communicates via 802.11G
- A modular approach was used so that our client/server could be implemented on many platforms

