Underwater "Tire" Robot A.U.V.

Software Team

Faculty Sponsor
Dr. Phil Bernhard

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Client
Dr. Stephen Wood

Project Goal

- Develop software for an autonomous underwater vehicle capable of navigating and surviving with minimal to no human control
- Collect and synchronize large quantities of sensor data from multiple different sources and organize it into an onboard database
- Transmit collected data back via satellite uplink

Technical Challenges

- Develop the AI for the master controller

- Learn and implement the Mission Oriented Operating System(MOOS)

- Managing and formatting I/O data for multiple different hardware systems

Milestone 1

- Collect hardware I/O formats and provide examples
- Work with and demo MOOS example applications
- Requirement Document
- Design Document
- Test Plan

Milestone 2

- GPS Nav simulation

- AUV dead reckoning simulation

- Simulate motor controls

Milestone 3

- Simulate Sensor input

- Simulate collision avoidance system

- Simulate data transmission

Task Matrix

Task	Taylor	Robert	Clayton	Sean
Investigate/Select Tools	Hardware formatting	Pathfinding Alg	MOOS	MOOS
Demo/Examples	Formatting examples	GPS navigation	Hardware control	Data visualization
Requirement Document	Write 40%	Write 20%	Write 20%	Write 20%
Design Document	Write 20%	Write 40%	Write 20%	Write 20%
Test Plan	Write 20%	Write 20%	Write 30%	Write 30%