Hydrus: Autonomous Boat Drone for Water Quality Monitoring

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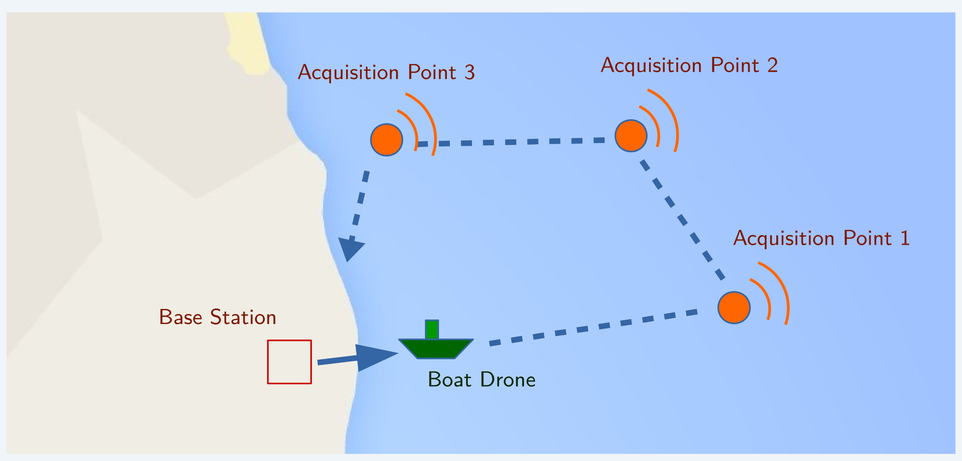
Objectives

- Create an autonomous drone platform for monitoring of water quality metrics.
- The boat should be able to navigate via GPS and utilize sensors to acquire and log data.

Concept

- Lack of basic sanitation is a very serious problem in Brazil.
- Monitoring water quality in reservoirs and other hydric resources is of strategic importance to the population.
- The automatic measurement approach may help do the monitoring more efficiently.



Methods

- Navigation control was implemented by fusing GPS and magnetometer compass data. A specialized controller handles thrust vectoring.
- Special PC software was created for programming and controlling the drone.

Results and Conclusions

- Our boat was able to navigate successfully and perform the specified functionality.
- We have a flexible platform that can be extended for other applications in the future.

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