Supervisor meeting

Wednesday, 8th of February of 2017

Project Plan

- Handle disturbances fits more to the semester requirements than trying to avoid obstacles.
- Following a route can be done in many ways, with way-points, trajectories or others. We should decide which to use.

Organization of the controllers in Low Level/High Level

- In order to decide if we keep it as it is or put the inner loop in the arduino, we should look into the dynamics and the time to process in the high level processor.

Batteries and Power supplies

- The batteries should be the same, but we can use the power supply for now.

Model

- We have a good simple starting model. It would be a good idea to keep it like this for now.
- We are not able to control the other three degrees of freedom but we would get coupling dynamics through the extra equations.
- The side-thrusters may not have any effect. Remove them if the goal is to sail and include them if it is to stay still.
- We can reuse the parameters obtained from previous reports.
- The simulation does not look correct now, it should be turning in a fixed circle at the end.
- The control problem can be solved with the three degree model.

Estimation

- What you do is fusing all your sensors in order to get overall better position and direction. For example, you get a bias with the IMU which is corrected by the GPS.
- For the estimation we need a six dimensional model in order to get a good estimation.

GPS option

- We could use an RTK GPS, which will give us a cm precision. It is more expensive and it requires radio-connection to a base station.

Test suggestion

- Drive in the parking lot and then check the position in the map. This could be used to test the estimation of the position.

Miscellaneous

- We could start documenting the model.
- 'Guidance and Control of Ocean Vehicles', 'Marine Craft Hydrodynamics and Motion Control' and 'Marine Control Systems and ...' are books that we can look into

Next Supervisor Meeting

Tuesday, 14th of February at 9:00