Supervisor meeting

Wednesday, 01th of March of 2017

State Space

- The objective is in the world frame, but the control is done in the boat frame.
- Another approach is to calculate the actuation in the NED frame and then translate the forces into the boat frame.
- GPS and IMU come in different frames.
- We could try to make a drawing of what goes on which frame.

Discontinuity

- It is a matter on where you put your discontinuity, you can just change it from sample to sample. It is just an mapping.

GPS

- Distribution of measurements, you have mean value and variance. The distribution is Gaussian The sigma value is the standard deviation and it is approximately 68 % of the total amount of samples. 3σ is 99.7 % and 2σ is 95 %. So with 99 % probability we are within 5 meters of our real position.
- The jumps are mostly because we switch satellites.
- The RTK basically corrects the average of the normal GPS.
- The goal is 10 cm so it is needed to use a RTK GPS.
- We should conclude that the GPS is fine but is not useful for us.
- Jesper will look into getting the RTK GPS.

Simulation

- The trajectory of the boat should approach a circle and it does not.
- The equations in the body frame seem to work fine, but in the NED frame it does not give a circle.

Added masses

- We should include them.
- We can measure them by knowing all the variables involved in an equation except the boat mass plus the added mass.

Miscellaneous

- We could maybe specify the plan a bit more.
- We may take the sensor fusion implementation from the previous group.
- We can say that it is not the focus of the project as it is not the focus of this semester either.
- It is important to ensure that the requirements need to be verifiable and measurable. They should refer to the technical aspects of the vessel and the problem to be solved.

Next Supervisor Meeting

Wednesday, 8th of March at 13:00