



## MSC THESIS DESCRIPTION SHEET

**Name:** Bendik Olai Agdal  
**Department:** Engineering Cybernetics  
**Thesis title:** Design and Implementation of Control System for Green Unmanned Surface Vehicle

### Thesis Description:

The project aims to design and implement an onboard control system for a wave and solar powered unmanned surface vehicle (USV). This includes design, selection of components, implementation and testing of USV.

The master project will be based on the findings in the project report that was written by the student in semester 1. The project report focused on gaining understanding of technicalities related to real-life use of USVs, specification of requirements and proposed a high level design for the system. The system specifications and high level design used in the master project is based on the solution that was proposed in the semester 1 project.

An apprentice in automation was made available to the student for selecting of connectors, cables, fuses and relays. The apprentice made the detailed schematics for the system and performed the wiring and mounting of devices in coordination with the student.

Most of the selected components arrived in the end of February, but the delivery of the USV was delayed to March 21st. At delivery, the student had engineers from AutoNaut Ltd. available to answer questions. The student was also able to request necessary information from AutoNaut via email prior to and after delivery.

**Start date:** 2018-01-15  
**Due date:** 2018-06-10

**Thesis performed at:** Department of Engineering Cybernetics, NTNU  
**Supervisor:** Professor Thor Arne Johansen, Dept. of Eng. Cybernetics, NTNU  
**Co-Supervisor:** Artur Zolich, Dept. of Eng. Cybernetics, NTNU