



Autonomous Paradrone



The goal of the project is the development of a small-scale prototype of a motorized paraglider drone (*Paradrone*). The drone should be both remotely controllable and capable of autonomously flying a predefined route. For this purpose, it must be able to *localize* itself in its surroundings, and a *flight controller* must be developed. The hardware basis is an RC paraglider (approx. 1.5 m wingspan) which will need to be equipped with an electric motor, battery, and a flight controller.

The work includes hardware development, software implementation, and the execution of flight tests in the drone laboratory of the Ohm Innovation Center (*AerodrOhm*).

Work Packages

- Selection and adaptation of a suitable RC paraglider as the hardware basis
- Development of the flight controller and localization
- Validation of the flight controller in simulation
- Validation of the flight controller in flight tests

Requirements

- Basic knowledge of a higher-level programming language (e.g., Python, C++)
- Experience with hardware development (e.g., microcontrollers, sensors, actuators)
- (optional) Basic knowledge of ROS (Robot Operating System)

This topic is ideally suited as a project work for two to three students. However, it can also be worked on in whole or in part as a Bachelor's or Master's thesis.