



# Master Thesis

## Lakeside Labs

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**Stefan Leitner:**

*Design and implementation of an embedded communication and sensing platform for use with UAVs*

### Description

This thesis is part of the collaborative microdrones research project from the Lakeside Labs. It is about finding a suitable platform for UAVs with various restrictions as weight and power resources. The implementation of such a platform should be able to control a digital camera remotely, acquire the image or sensor data and send it via a communication link to the base station. Therefore an embedded platform should be evaluated, which is combined with a wireless communication system and an interface to the UAV.

Furthermore this platform is capable to receive a way point plan from the base station to steer the micro drone, in respect of additional UAVs in the compound of the collaborative airborne network. This requires the introduction of Quality of Service on the communication link, e.g. for positioning data. Different protocols for the low level control of the UAV should be evaluated and implemented in the embedded platform.

### Advisor

Prof. Bernhard Rinner | Dipl.-Ing. Daniel Wischounig-Strucl