# Thesis Proposal

## Integrated Airfield Light and Aircraft/Vehicle Sensor


## Description

On an airfield, it is important to have a situational awareness of the vehicles and aircrafts at all times. Today radar and other ground sensors are used to get this information. At a larger airport, there is about 20 000 inset taxiway light fixtures spread out all over and they could be used to help tracking airplane/vehicle movement. This can only be achieved if the light fixtures are updated with the right hardware and firmware.

The idea is to integrate sensors in the light fixture to measure and filter vibrations and/or infrasound created by airplanes and other vehicles. This technique would help map movements on the airport and contribute to safer and more reliable operations. The master thesis could also include differentiation between airplane and other vehicles and identification of aircraft type. With the combined sensor data (phase, amplitude etc) from several lights the combined location/speed data would be precise.

The master thesis is most suitable for two students working together and will be based in Malmö.

**Tasks within the project:**

- Explore what sensors that exists to be used, price/performance
- Find an algorithm to that isolate characteristics of an aircraft and other vehicles
- Evaluate group sensing / fusion sensors
- Make a prototype
- Do field tests to evaluate feasibility

**Suitable skills and interests:**

- Microcontroller firmware development
- Math / algorithms / self-learning
- Electronics prototyping
- Sensor sampling, filtering and evaluation

**Application**

Please send your application by December 1st, 2017 to **thesis@adbsafegate.com**.

Title your email **"Master Thesis - Integrated Airfield Light and Aircraft/Vehicle Sensor"**

www.adbsafegate.com