

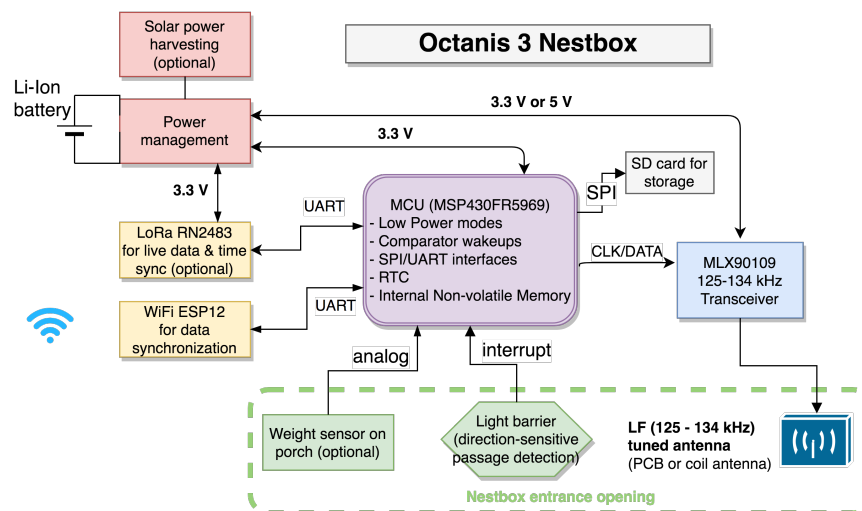
Semester project: RFID reader design for owl monitoring

The [Octanis Association](http://nestbox.octanis.org/) sets out on a mission to equip Switzerland's owl nestboxes with an RFID-based monitoring system.



Owls will be equipped with an RFID tag in order to detect their passages in and out of the nestboxes. Starting with a demo kit of the RFID reader IC and an ultra-low power MPS430 microcontroller, some basic application code in C will be written. Based on the selection of the discrete components, a prototype PCB with integrated antenna will be designed (in KiCad), manufactured and tested, with emphasis on facilitating mass-production of the PCBs at a later stage.

The detection system shall run on a battery for 6 months, which is why special efforts in low power consumption (on software and hardware level) must be made.



Competences you will develop & apply:

- Rapid prototyping
- PCB design, manufacturing and testing
- Microcontroller programming (C); using serial protocols like UART or SPI
- Antenna design
- Power management
- RFID and LoRa application design

The student will select a subset of these tasks based on his or her interests and will develop the system in a collaborative effort with other members of the association. Academic supervision and grading will be done by the EPFL RFIC lab (Prof. C. Dehollain).

Learn more about the project goals in general on <http://nestbox.octanis.org/>
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