

SDR FISH TRACKER



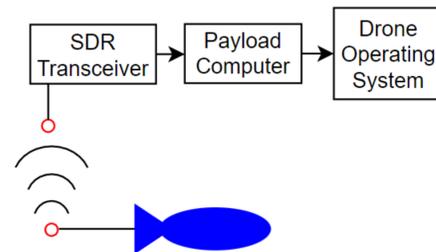
Project Overview

Design a drone payload capable of reading remote RFID biotags embedded in critically endangered Lost River Suckers.

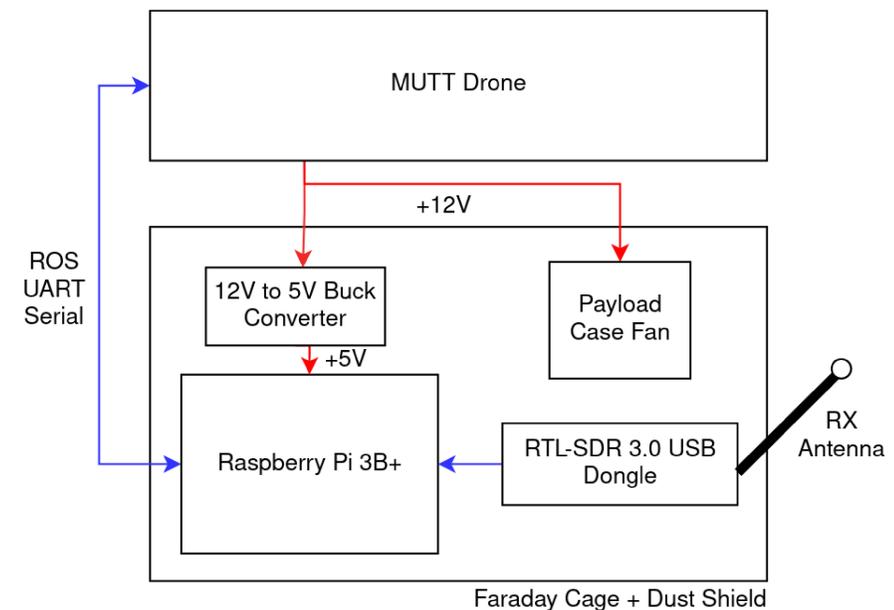
- Current methods of scanning for remote biotags are dangerous and expensive. Mounting scanning hardware to a drone is far safer and more cost-effective.
- Enabling the Fish and Wildlife Service to safely and effectively scan for remote biotags gives them the data necessary to save the endangered fish



Deltistes luxatus – Lost River Sucker



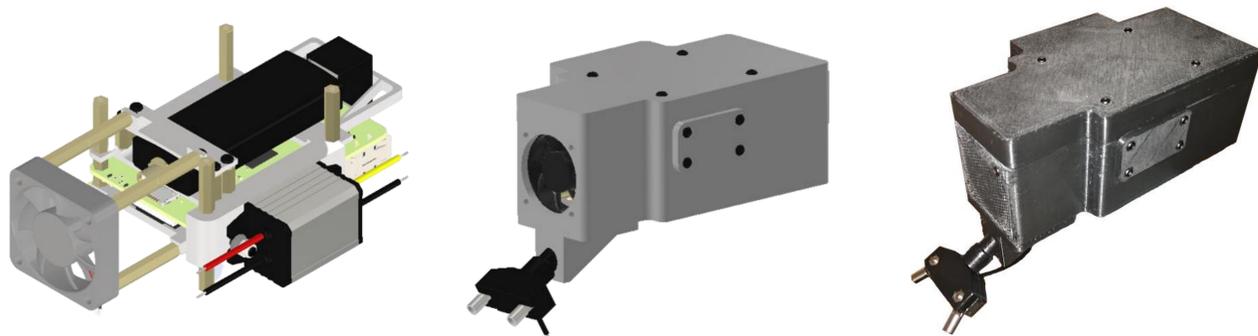
System



The Lotek-Equivalent Aquatic Scanning Hardware (LEASH) payload

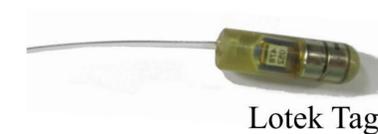
Methods

- Used Autodesk Inventor to create and simulate the three design iterations
- 3D printed the finalized components
- Used GNUradio to interface with the SDR hardware
- Stored fish tag information ROS nodes through the drone's hardware

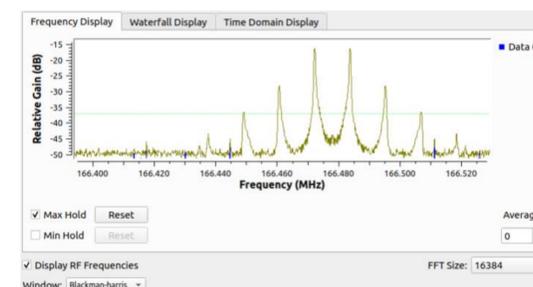


Conclusion

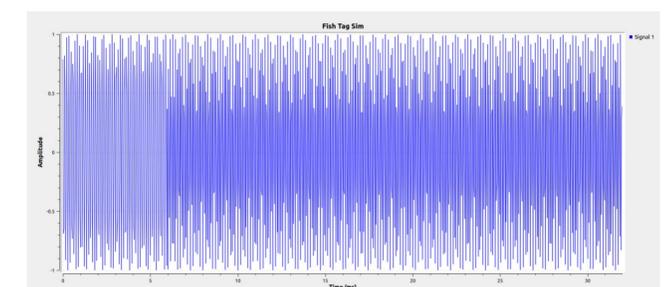
The scanning hardware was successfully implemented:



Lotek Tag



Tag Frequency Spectrum



Tag Frequency Shift Keying