

Potential Student Projects for Applewhite Aero

1) Wildfire Reconnaissance Camera

We have a need for a low-cost infrared or thermal camera to map wildfires. Specifications:

- Low-Cost Thermal or Infrared Camera
- GPS linked images/Geomapped
- Self-Powered with a three hour endurance
- Less than Two Pounds
- Receiving Inputs from PixHawk Autopilot
- Fits on a platform measuring 5.5W x13L x5H inches.
- Operating mostly at night at up to twenty miles range
- Onboard recording required
- Post Mission Processing must be included in package
- Deliverable is a detailed map of hot spots for review by the fire commander
- Option for airborne transmission of data file
- Option for live transmission of images

2) Aerial Agricultural Mapping

We need a low-cost agricultural camera to fit in our Oculus UAV

- Low-Cost Infrared Camera
- GPS linked images/Geo-mapped
- Self-Powered with a three hour endurance
- Less than 9 ounces Pounds
- Receiving Inputs from PixHawk Autopilot
- Fits in a TechPod/Oculus
- Operating in daylight hours within a mile range
- Onboard recording required
- Post Mission Processing must be included in package

3) Tracking Antenna

We have an off-the-shelf antenna tracking system (eagletreesystems.com) that needs to be assembled and tested with patch and yagi antennas for FPV systems.

4) UAV Flight Termination and Recovery System

We have a 25 pound UAV that requires a parachute-based recovery system

- System must be self-powered
- Operates with an independent transmitter/receiver
- Three-Mile Range

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5) UAV Tracking System

We need a low cost tracking system in case of lost link UAVs.

- System must be self-powered
- Tracking up to 20 miles.
- Off-the-shelf system preferred. Rocketry tracking system may be used.
- Currently have a 2 meter wavelength system but weight is a factor for the Oculus and Invenio.

Any questions contact Paul Applewhite or Al Creigh

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