AggieAir

A Remote Sensing Unmanned Aerial System for Scientific Applications

PRESENTED BY:

Austin Jensen

Unmanned aerial systems (commonly referred to as drones) are aircraft which use an autopilot and navigation sensors (e.g. GPS, inertial navigation unit) to navigate according to a pre-programmed flight plan. Since a human is not onboard the aircraft, UAS were first developed to remove solders from dangerous situations in military applications. However, there are many other non-military applications that UAS can be used for. One of these applications is remote sensing and aerial imagery. For example, UAS can be used to collect multispectral aerial imagery of rivers, streams and riparian vegetation to map fish habitat, monitor river restoration efforts, and the spread or management of invasive vegetation. The standard UAS with a camera is not sufficient to provide meaningful, scientific data for these applications. AggieAir is a UAS designed specifically for remote sensing and aerial imagery. It can collect, visual (red, green and blue), near-infrared (NIR), and thermal aerial imagery and has been used for many applications in rivers and riparian areas, wetland vegetation mapping, and agriculture. This presentation will introduce AggieAir and show how it has been used to produce scientific grade data for various applications.

Austin Jensen is currently working at The Utah Water Research Laboratory (UWRL) as a research engineer while finishing his Ph.D. degree at Utah State University. Before working with the UWRL, Austin worked at the Center for Self-Organizing and Intelligent Systems (CSOIS) as a research assistant where he has played a major part in creating the unmanned aerial vehicle (UAV) program at Utah State and in developing a low-cost autonomous UAV remote sensing platform called AggieAir. To meet an increasing demand for this platform, Austin has created a service center at the UWRL, which regularly flies AggieAir to capture aerial imagery

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