Missouri Drone Journalism Final Report

A Collaborative effort between KBIA, MU Information Technology Program and MU School of Journalism.

1. What has been accomplished on your project goals?

Our goals can be roughly summarized in a few parts:

1. To build and deploy small semi-autonomous drones capable of recording video and photographs
2. To conduct useful proof-of-concept tests and how-to guides for drone journalism
3. To produce usable, relevant news content with the drones
4. To produce at least one investigative story
5. To educate students on the use of Unmanned Aerial Systems (UASs/Drones) by offering courses.
6. To evaluate current technology to develop an understanding and present these to interested parties – journalists and developers.

We have achieved these 6 goals. Our first goal was completed early on when we built a quad copter model from the DJI company. We soon added a version of the DJI Quad called the Discovery which allowed us to attach a GoPro camera and obtain usable footage. We finally settled on a six-winged model that we used for most our later shots that has a camera gimbal to allow video stabilization.

Our third goal, to produce content, quickly became our main goal. We produced several digital stories for KBIA.org. The videos and written stories were shared widely and performed beyond expectations.

In summer 2013, we finally released one of our best stories, "Northern states enjoy an oil boom with free Missouri River water." We used the drone to illustrate the context around a northern oil boom fueled by the Missouri River. The 1200 word piece was an ambitious project that required several days of travel and meets our fourth goal to produce an investigative story.

The fifth goal has been met two-fold: Firstly, the Journalism course to teach Drone Journalism was offered to students in spring, 2013. This was a success which enabled use to meet our goals.

In addition the journalism course taught in SP13, a course offered by the MU Information Technology Program (INFOTC4001 Unmanned Aerial Systems) is being offered in FS14. The course has already met enrollment capacity of 30 students, and significant interest is present from other students.

The course focuses on the applications of UASs, and students work to understand the technical side of UASs. They are offered a Parrot AR drone as a platform

(provided by funds from MU IT Program), and will perform analysis of UAS missions in a civilian-oriented world, to include "Drone Journalism". Students perform programming tasks, and ultimately seek to produce a flying "application" for UASs.

2. What remains to be accomplished?

The IT4001 UAS course remains to be taught – the students are enrolled to capacity, the syllabus has been planned.

Certificates of Authorization have been sought for this course, and it is expected that students will return to outdoor flying activities – these are the results of negotiations by the MU IT Program for various different flying sites.

The remaining Drone Journalism Project funds are being used to support this course – further expenditure is expected over the summer 2014 time-period.

3. Evaluation Criteria:

Here are the criteria we wrote in our original application to the MUITC:

- Functional drone prototypes designed for journalism.
- Proof-of-concept tests such as mapping farms, creating photo stitches, successfully photographing wildlife, etc. These tests will be documented online and in our reports to the MUITC.
- Quality use cases and documenting efficient and practical workflows. The MUITC can evaluate this via reports and our online documentation.
- A long form investigative piece using information obtained via drones. This is the gold standard and the overarching goal of the entire project. We will also produce shorter stories using media obtained by drones for added value.

Because we have focused heavily on the creation of original content, most of the above can be evaluated via our online documentation at www.missouridronejournalism.com. Our stories have been published there and also at http://kbia.org/term/missouri-drone-journalism-program. Additionally, the MU IT Program maintains a website to support their work, at http://dronelab.missouri.edu

Current Expenditures:

There are many, small expenditures that go into the creation of several drones and accessories. These accessories include microcontrollers, batteries, spare parts, gimbals, motors, props, balancers, antennae, GPS receivers and many other things. Here is a summary of our expenses.

Drone Parts	13132.20
Cameras and Camera Accessories	3685.92
Transmitters	652.81
Batteries	1214.71
Software and Miscellaneous	193.70
Total	18879.34

Attached is an official, complete financial statement.

Our original budget included money for travel. We did incur travel expenses for some stories, but the Mizzou Advantage fund stepped in to help with these costs. Therefore we only have technology expenditures so far.

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Media coverage of Drone Journalism Project

The Drone Journalism project, along with technology projects from the MU IT Program have been featured in a range of media. The project has received (video) coverage on NBC Nightly News, an interview in a PBS podcast. In print/online, the project has received attention from The Times of India, Kansas City Star, St Louis Post Dispatch. A mostly complete list of media features is available on the MU IT Program DroneLab page, "Featured In…"

This coverage has at times provided to beneficial, and has both spawned future collaborative efforts and also brought attention from the Federal Aviation Administration.

Federal Restrictions

The act of "flying a drone" or operating an Unmanned Aerial System is currently an interesting point of law. Lawsuits (and appeals) have recently been filed by the FAA against individual for commercial use of UAS – the judge initially ruled that the FAA did not have any rules prohibiting the use of small radio control models such as the UAS that we have utilized. The FAA have subsequently appealed.

In july 2013, the Univeristy received a Cease and Desist letter (as can be seen from the Missouri Drone Journalism blog posting), in essence coming to 3 options.

a) stop flying
b) obtain a Certificate of Authorization (COA)

c) obtain commercial experimental flight status.

Since the university is a public institution, the decision was made to embark on the COA process. This has consisted (so far) of the Attorney General of the State of Missouri signing a Public Proclamation that MU is a public institution. From there, the FAA have granted the ability to apply for a COA.

The COA process is fairly lengthy in nature – a response is indicated in 60-90 business days. This application requires a small operating area (typically of 1 sq mile or less) that is outside of controlled airspace, away from built up areas, etc. It also requires a time frame when the UAS will be use, along with technical documentation ranging from radio frequencies, control system specifics, safety, maintenance and training documents.

Due to the length it takes to obtain a COA, it has essentially meant that using "drones as a tool for journalists" is essentially a non-starter – unless one is able to predict when an event will occur at least 90 days into the future, and narrow down the location to a square mile.

Conclusion

The project has yielded some beneficial results: Students have become more educated in "drones" with the courses being offered, journalists world-over have contacted members of the project for advice in setting up their own drone-journalism programs, and the program has received considerable media coverage that has been favorable to MU.