



Unmanned Aircraft for Precipitation Enhancement:
Promoting Drought Resilience and Advancing
Nevada's UAS Industry

Quarterly Progress Report

Reporting Period: 1 October to 31 December 2015
December 31, 2015

Project Purpose

The purpose of this project is to develop and test UAS for weather modification, culminating in operational use over the Lake Tahoe Basin. The project will rely on our extensive background and data to evaluate the effectiveness of UAS in increasing precipitation, while also serving to demonstrate the technology and our GOED-supported partnership in an area of national significance and visibility. Because UAS may increase the number of opportunities to conduct seeding flights, this technology has the potential to improve the overall effectiveness of cloud seeding operations, **creating new business opportunities while increasing water supplies.**

This project incorporates activities and progress milestones that can be demonstrated rapidly upon beginning the project, with regular steps that can **showcase this innovative use of UAS technology to address water shortages.** At its completion, the scientific evaluation of its effectiveness can be used to promote our industry-academic partnership and Nevada-centered UAS business in other areas where cloud seeding is currently done, including most of the Western States, Canada, and several other countries.

Section I: Proposal Progress

Although the project's purpose is to investigate the potential of UAS for weather modification and to conduct operational tests of this technology over Nevada skies, the progress we will make in attaining airspace access will enhance Nevada's and DRI's leadership status in the UAS realm, and will cement our collective, decades-long role as worldwide leaders in weather modification. This enhanced visibility already is yielding dividends by increasing DRI's competitiveness for extramural funding competitions; and as a result of our project activities, three significant funding proposals will be improved based on the capabilities we develop together with our industry partners. We expect the total amount of funding requested for these three proposals alone to exceed \$20 million, and will provide progress updates in future quarterly reports through the duration of this project including details on any additional proposals submitted.

Additional progress on proposals related to this project will be provided in the subsections below in future reports. (Due to the recent approval and funding of this project, as well as its operational focus and short timeframe, activity in this area has been limited.)

Section II: Performance

Table 2: Progress Toward Metrics

Primary Categories	Q4 2015
Companies Moved to NV	0
Start-up companies	1
Jobs Created	0
IP Licenses	0
IP Revenue	0
Grants Received/Affiliated	0/0
Sponsored Research (Contracts/\$)	0
Secondary Categories	
Patents (Filed/Awarded)	0
Students placed with Companies	0
Impact Faculty Hired	0
Gifts/Donations to KF Projects	0
Student Internships	0

Start-up Companies:

Desert Research Corporation. In Q4 AviSight was formed, and we believe that this project may have been instrumental to its formation.

Jobs Created:

We have been unable to determine whether any jobs have been created in the past three weeks as a result of this project.

Intellectual Property Licenses:

\$0.

Intellectual Property Revenue:

\$0.

Grants received:

Since the project was funded only in the second week of December 2015, no additional grants have been received.

Sponsored research:

\$0.

Impact Faculty hired:

None as of the end of Q4 2015.

Student Internships:

None as of the end of Q4 2015.

Section III: Budget

The UAS-Cloud Seeding project received funding on 8 December 2015. During that time we have attempted to accelerate our activities to attempt to match the pace of progress we anticipated when the project was designed and proposed. The two faculty, three project scientists, and anticipated technician hires in Q1-2 2016 will continue to be heavily involved in this project for the next two quarters as a result, and Q4 expenditures reflect the initial efforts on this project.

Since project approval and funding, we have been working with Drone America and AviSight to develop and implement non-disclosure and IP agreements and subaward contracts. DRI has provided these two companies with drafts and has been requesting action by our subcontractors on these items, but as of the end of Q4 2015 our subcontractors have not signed NDA or subcontracts. Therefore no subaward spending has taken place.

Section IV: Monthly Logs of AIC Activities for Reporting Quarter

Prior to December 2015 (receipt of funding occurred 8 December 2015)
Business/project development General activity
December 2015
Business/project development; General Activity
DRI Activities <ul style="list-style-type: none">• Project kickoff meeting and update meetings with WxMod team• Adam drafted NDA and subcontract language for AviSight and Drone America• WxModification Program added “aircraft seeding potential” to forecasts to allow for the assessment of potential business opportunities from UAS seeding• DRI prepared a press release describing the initiation of the project; it is ready for immediate release pending GOED review• DRI is preparing for ground-based tests with Drone America
Drone America <ul style="list-style-type: none">• Adam submitted draft NDA and subcontract materials and DRI is now awaiting Drone America response• DA reports progress on new UAS platform and expects ground and flight tests in Q1 2016
AviSight <ul style="list-style-type: none">• Adam submitted draft NDA materials and DRI is now awaiting Avisight response• AviSight reports that they are in regular contact with Drone America regarding UAS specifications for airspace-access documents

Section V: Appendix

No appendices this quarter. In future quarters, Appendices may include press releases produced by DRI, news items related to the project, publications and/or presentations resulting from the project, etc.