



Executive Brief: FAA Unmanned Aircraft Systems (UAS) Test Site Selection Process

October 2013

Background

Idaho has applied for and is actively pursuing the opportunity to be selected as one of six Federal Aviation Administration (FAA) Unmanned Aircraft Systems (UAS) Test Sites. The state has established and is leveraging the strength of the Idaho Unmanned Aircraft Systems Working Group, a collaboration of public agencies, institutions of higher learning and private-sector companies. The group is proactively raising awareness of Idaho's unique assets, attributes and ability to play a critical role in the rapidly expanding UAS industry.

Opportunity

The UAS field is experiencing considerable growth, with industry experts anticipating it to become an \$89 billion industry during the next 15 years. New applications for this technology are finding a foothold in several established and emerging fields, from agriculture to public safety to habitat monitoring. The industry requires a complex and evolving infrastructure of support that spans aerospace, research, support facilities, high technology, computer science, cyber security, software coding and other related business functions, many of which Idaho is already actively producing. The economic potential for Idaho is significant. Conservative forecasts by the Idaho Department of Commerce estimate the UAS industry will:

- Increase the number of direct, indirect and induced jobs by 881 during a ten-year span
- Provide jobs with a wage well above the current Idaho average, as current roles average \$31.73/hour (U.S. Department Labor Statistics)
- Expand the number of Idaho aerospace firms from 10 to 150 by 2023
- Increase the Gross Regional/State Product by a total in excess of \$57 million ten years after selection

Approach

Given the intense competition between 24 states vying for only six spots, differentiating Idaho's unique assets for the industry is vitally important. Under the leadership of the Idaho UAS Working Group, its members attended the nation's leading UAS industry event, Association for Unmanned Vehicle Systems International (AUVSI), to promote Idaho's expert resources, existing infrastructure and statewide desire to bring this industry to the state. This collective effort elevated awareness of Idaho's strengths within the industry and beyond, via media coverage and direct contact with leaders in the field.

Simultaneously, all members of Idaho's Congressional Delegation pledged support for pursuing the FAA test site designation in a letter to the FAA Administrator. Idaho is also one of the first states to draft and enact UAS-focused legislation to both protect its citizens and create a clear path forward for the industry. The Idaho State Legislature also approved a measure encouraging the state to pursue the FAA test site designation.

The Idaho UAS Working Group is building on this in-state support and industry momentum by hosting the first Idaho Unmanned Conference on November 6, to bolster support and credibility with industry leaders. The group will continue to reinforce Idaho's unique infrastructure until the selection process is announced in late 2013 by promoting Idaho's legacy of aerospace innovation to the research and training expertise of its educational institutions to Idaho National Laboratory's field leadership and its UAS test range – the second-largest non-Department of Defense range in the nation.

Additional Resources

- Land Here Brochure: An overview of Idaho's UAS infrastructure and capabilities
- State Government Support of UAS
- State of Idaho Unmanned Aircraft Systems Inventory
- FAA SIR Economic Impact Analysis

Land. Here.

Idaho has been piloting—and pioneering—UAS technology for more than a decade, and our expertise is paying off. We're seeing increased efficiencies in our agriculture and energy sectors, advances in environmental monitoring, and improved safety across several industries.

Our proven UAS capabilities and the Idaho National Laboratory/Battelle Energy Alliance's (INL/BEA) leading research in the UAS field puts Idaho at the forefront of integrating unmanned aircraft into the nation's airspace. With a testing site already in place, a deep technology and manufacturing base, and our vast airspace, **Idaho is more than ready to launch your UAS program.**





A PROVEN TESTING GROUND

UAS testing is emerging as a growth industry in Idaho's economy and is at the center of many of our university research efforts. We have the high-tech know-how, one of the largest non-DOD test sites in the United States, terrain that just doesn't stop, and a business infrastructure that drives it all forward.



See why Idaho is a UAS site of choice:

- **Cleared for takeoff.** INL's COA is 900 square miles, making it the second-largest in the United States.
- **Ready to roll.** Idaho already has an approved UAS test flight runway.
- **Testing and deployment experts.** INL continues to be a lead partner in U.S. Department of Energy UAS operations. Its work, including successful integration of advanced sensor technologies, is pushing the boundaries of UAS applications.
- **Access to R&D.** Our universities are testing and using UAS in their research content areas, and offer programs on aircraft technologies, robotics, and UAV instrumentation.
- **Top-notch security and aerospace training.** Idaho State University operates one of the nation's top cyber security programs, and North Idaho College is building a \$3 million aerospace training center.
- **Room for research.** Idaho is the 7th least densely populated state.
- **All-terrain testing.** Idaho's landscape is diverse, to say the least. We have mountains, hills, agricultural zones, rangelands, lava fields, forests, rivers, canyons, and urban areas.

IDAHO'S IN-FLIGHT EXPERTS

Idaho National Laboratory has been at the forefront of UAS development for the past 15 years. INL currently has COAs from the FAA and puts UASs to work in a wide range of research and development flight operations. The U.S. Department of Energy has named INL the leader in its UAS operations, and the UAS team at INL is known for its vast knowledge of and experience in all aspects of DOE UAS operations.

"As the leader for DOE in UAS operations, Idaho National Lab/Battelle Energy Alliance ... is capable of deploying a wide variety of payloads for clients looking for affordable, field-deployable airframe technologies with meaningful missions and endurance."

—Derek Wadsworth, INL, Unmanned Systems Group Lead

YOUR UAS TEAM

When you choose Idaho as a UAS program site, you'll get full support from our state government, business partners, and research universities.



STATE GOVERNMENT SUPPORT

■ **Idaho Department of Commerce |** Aerospace is one of Idaho's core industries and an important area for growth and investment. Idaho Commerce is the lead agency for the development of the Idaho UAS Center of Excellence.

■ **Idaho Department of Transportation, Division of Aeronautics |** The manager of Idaho's airport system, this agency has been heavily involved in the development of the UAS industry and the growth of the aerospace industry within the state.

■ **Idaho National Guard and Idaho Bureau of Homeland Security |** These organizations have developed a dedicated landing strip and other key UAS infrastructure in Idaho, experience that makes them a leading National Guard UAS training facility.



"I see UAV as a tool that can allow agriculture to meet those [dramatic challenges to agriculture] head on, challenges of feeding a growing world population, using fewer resources, conserving water, and meeting the demands of the public to be better stewards to the land."

—Robert Blair, Blair Farms



BUSINESS PARTNERS

■ **Idaho Power |** Idaho Power uses low-cost UAS to monitor salmon populations on Idaho rivers, resulting in dramatic cost savings over manned helicopter flights, as well as increased safety, especially over expansive wilderness and difficult terrain.

■ **ADAVSO |** Pioneers in the UAS industry, Advanced Aviation Solutions, LLC offers entire-system expertise—aircraft, ground control station, operator, links, and airspace. The company has 20,000-plus hours employing aircraft in-flight instruction, global air cargo, search and rescue, air-to-air combat, long-range surveillance, and test and evaluation.

■ **Blair Farms |** Robert Blair's 1,500-acre family farm was established in 1903 but he's pushing it into the 21st century. Blair currently uses a UAV to scout and analyze his crops for disease, water usage, and bugs. As a result, Blair has saved 25% in water costs, uses fewer resources, is a better land steward, and is better positioned to meeting the growing global food need.

■ **Cygnus, Inc. |** Located in Ponderay, Idaho, Cygnus manufactures precision sheet metal and machined parts for military and commercial aircraft. Cygnus supplies multiple military unmanned aircraft programs, including Global Hawk, Fire Scout, and UCAS.

■ **Empire Airlines |** Operating out of 15 states, Idaho-based Empire provides aviation services, including cargo and passenger airline operations for large international customers and heavy maintenance, primarily on large turboprops. Empire performs a wide range of government contract work and offers consulting, primarily related to airline startups, equipment changes, and Supplemental Type Certificates (STC).

■ **Omnitech Robotics, Inc. |** ORI develops and manufactures robotic controls, equipment, components, unmanned ground vehicle systems, and broad-based automation. The company's experience in unmanned vehicles centers on converting ground vehicles to remote control, tele-operated control, or semi-autonomous control.

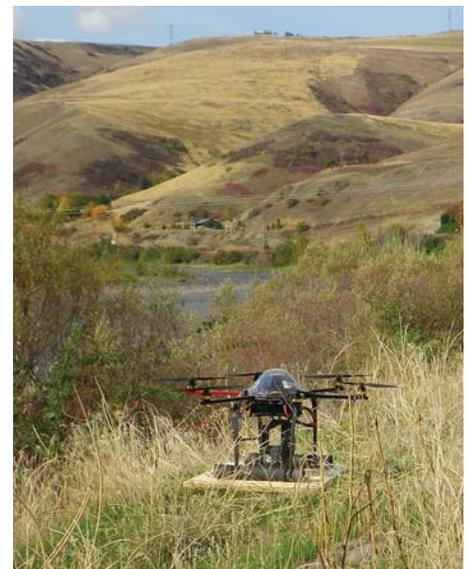
INSTITUTIONS

■ **Idaho State University |** ISU operates one of the nation's top cyber security programs and maintains contracts with several federal agencies to conduct security research. Much of the research focuses on UAS command control links, jamming, spoofing, and hijacking tactics. The University features programs on Aircraft Maintenance Technology, Robotics and Communication, Systems Engineering, and training on aviation electronics, sensors, and UAV instrumentation.

■ **University of Idaho |** UofI uses UAV for mapping land cover types and forest research. Additionally the University specializes in ground control station research, design, and public research for UAS.

■ **Boise State University |** BSU currently is working with the FAA to conduct research into commercial aircraft cabin air quality and is well poised shift this research into UAS ground station environment studies.

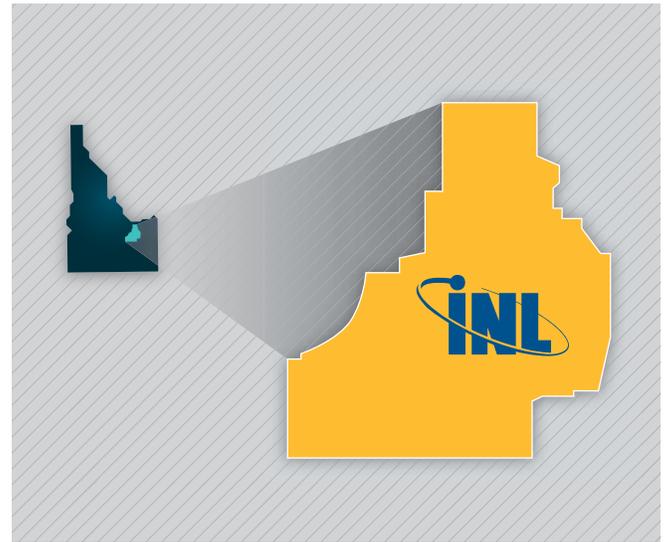
■ **North Idaho College |** NIC was awarded a \$2.97 million grant to create an aerospace center to meet the workforce demands of the aerospace industry. The college will focus on credit and non credit training in the fields of general aviation, airframe composites, and non-destructive testing.



Idaho:

More than qualified

With a test site operation already in place at INL and more than 15 years of active UAS testing experience, Idaho has the people, technology, and infrastructure to successfully serve as an **FAA UAS Test Site**. We are excited to work with the FAA as a test site location, as well as establish a **UAS Center of Excellence** in the state for testing, business development, and research.



Operational/test pilot experience	12 pilots qualified in all classes of UAS vehicles; over 7,800 unmanned flight hours; and over 32,000 manned flight hours.
Frequency Spectrum Management experience	Existing and current NTIA Experimental Station Spectrum Authority (KHz, MHz, GHz) in addition to current authorization for electronic attack test, training, and exercise operations.
Wireless Test Bed National User Facility	Embedded in the test range, this is ideal for large-scale wireless spectrum sharing, testing, evaluation, interoperability testing, and cyber wired and wireless analysis.
Mature UAS test site operation experience	Existing Certificates of Authorization are in place. INL has held more than 100 COAs for fixed and rotary wing units. All NEPA, HAZMAT, ATC, and Land Use Agreements are in place and current.
Range and site are in place and operating	A 1000' x 100' paved UAS runway located in the center of 890 square miles of secured FAA-approved UAS flight operations test range/airspace. Firefighting and emergency medical assets are in place. Existing ownership and access to VHF radio support are outlined in the COA.
Operating over 40 UAS platforms	Current operations and maintenance revolve around 40 UAS platforms supported by mobile control stations. Fixed and rotary wing range in size from less than a pound to 55 pounds.
Facilities	Facilities include machine shops, electronics labs, office space, storage areas, a medical dispensary, and dining services.

