

The ECONOMIC PULSE DEC. 2015

Nevada's UAS Effort is Flying High

In the second quarter of 2015, the Nevada Institute for Autonomous Systems (NIAS) did an internal assessment to determine how to best facilitate Nevada's leading role in developing the Unmanned Aerial Systems (UAS) industry, and concluded that organizational changes and the restructuring of operations were needed to refocus on three targeted objectives: business lead generation; achieving and increasing Certificate of Authorization (COA) flights; and opening up future airspace possibilities to employ special mission operations, larger UAS, and the possibility to conduct operations beyond line of sight.

As a result of the renewed NIAS focus, two permanent staff members have been hired – a Director of Operations, Chris Walaach, and a Director of Business Development, Mark Barker.

Additionally, the time it takes to test flights in Nevada has been greatly reduced following the award from

the FAA for a blanket COA that will allow test flights for a public purpose at any of Nevada's FAA UAS Test Site locations. Prior to this, every flight not previously awarded a COA needed to file for a COA from the FAA, which led to a significant backlog of COA awards.



Since this award, there have been over 40 flights in Nevada, a nine-fold increase in COA flights from the previous 12 months of air missions in Nevada under Test Site authority.

The beginning of the 3rd quarter was the best flying quarter to date, and the 4th Quarter is shaping up to be even better with the largest UAS testing and validation occurring November 16-17 in northern Nevada. In fact, **at a remote site on November 17, 21 air missions were flown** during a short period of time with demonstrated teamwork and impressive communications responsible for this success. Through NIAS, the State is postured to **increase our UAS flying activity by over 300%** in the 4th Quarter compared to the previous quarter.



Nevada's UAS Research is Helping to Drive the Industry Forward

The FAA Test Site designation and the State's knowledge of the UAS industry creates an interesting opportunity to pair this emerging industry with other state focuses, such as agriculture and water. Through a Request for Information, the State is looking to advance Nevada's UAS industry development through UAS/sensor research for drought impacts mitigation, water resource management, and the advancement of best practices in agriculture management.

Nevada's research institutions are also capitalizing on the drive to innovate the UAS industry.



University of Nevada, Reno

University of Nevada Reno/Nevada Advanced Autonomous Systems Innovation Center (NAASIC)

- This past quarter, NAASIC conducted its first UAV test flight under the management of NIAS test site personnel and incorporated the resources of a UAS company from Australia that is partnered with UNR
- NAASIC deployed its resources to Mongolia and joined a team of international researchers on a project involving the use of UAVs to visually identify living fish in the waters of a dam
- UNR was selected to participate in NASA's first UAS Traffic Management buildout and testing, and Dr. Richard Kelley, NAASIC's Chief Engineer, was asked to demonstrate technical coding that would allow aerial platforms to integrate into traffic management systems; UNR was recognized by NASA as the first outside entity in the country to integrate into their system successfully
- NAASIC is currently under contract with the Environmental Protection Agency and Weston Solutions to conduct aerial surveying of abandoned uranium mines on the Navajo Reservation lands in northern New Mexico and Arizona



University of Nevada, Las Vegas

- UNLV has several UAS research programs underway, including:
 - » UAV research in support of counter-poaching efforts as a deterrent to combatting illicit trafficking
 - » Autonomous indoor UAV navigation using sensor fusion
 - » Detection and tracking of human and endangered species using acoustic, thermal, and hyperspectral videos
 - » Robust and adaptive guidance navigation and control of UAVs for urban applications
 - » Enhanced situational awareness using UAS for disaster remediation
 - » Development of plug-and-play interchangeable components for UAS with mobile manipulation capacity
 - » The Flying Orchestra: a flying aerial robot live entertainment system
 - » Developing secure communication method for cloud-based Small UAS traffic management



The Desert Research Institute

- DRI has been selected to receive a Knowledge Fund grant to perform testing for UAS cloud-seeding efforts
- A demonstration and information meeting with Sierra Front helitack firefighters was held in Minden, NV to gather input on best uses of UAS for wildland fire response and mitigation
- DRI is acquiring and testing payloads for fire-related UAS operations



Israeli Companies Announce Moves to Nevada to Grow Nevada's Water Cluster

Since 2013, Nevada has been working to leverage the State's water expertise with international companies that would benefit from the services of the Nevada Center of Excellence and our research institutions. The State of Nevada is thrilled to announce that Ayyeka and OutLocks will launch their U.S. presence in Nevada to be important contributors to Nevada's water technology cluster.

The Governor's trade mission to Israel in 2014 allowed Nevada and Israel to find opportunities based on similarly arid landscapes and complimentary expertise in water resource technology and management. The Nevada Center of Excellence has worked diligently to attract partner companies to our state, and it is exciting to see that our efforts in Israel are paying off through Ayyeka and OutLocks.

- Founded in 2011, **Ayyeka** is an Israeli start-up venture that provides remote monitoring solutions for use in control of water facilities. Ayyeka completed installation of a demonstration project in Las Vegas in September of this year, and has agreed to base its U.S. water operation in Nevada in the first year, with plans to establish physical operations for business development, marketing, product development, and manufacturing within three years.
- Founded in 2007, **OutLocks** is an Israeli start-up venture that provides specialized physical security solutions. A pilot installation will begin in Las Vegas in 2015, and OutLocks has agreed to launch its sales and distribution for U.S. water operations in Nevada.

SNTIC Hears from Convention Industry Leaders

At the October Southern Nevada Tourism Infrastructure Committee (SNTIC) meeting, leaders in the convention industry were given an opportunity to talk about the important economic impact this industry has on southern Nevada as well as highlight the challenges they face in producing trade shows in Las Vegas – transportation issues and convention space infrastructure were among the concerns cited by the speakers.

The message to the Committee was clear: Las Vegas leads in the convention industry, but we have to work to stay on top.



LEARN MORE

www.sntic.org

Nevada Businesses Encouraged to Apply for Trade Mission, Export Assistance to China and Poland

The Governor's Office of Economic Development (GOED) has been awarded \$300,000 through the State Trade Export Promotion (STEP) Grant program administered by the U.S. Small Business Administration to help fund ongoing initiatives in the countries of the People's Republic of China and Poland.

Companies wishing to receive funding from GOED's STEP Grant award to assist with exporting and trade mission attendance in Poland and China are encouraged to fill out the application located on GOED's website.



LEARN MORE

www.diversifynevada.com/selecting-nevada/global/step-grant

UNLV and Tesla Formalize Research Partnership



During the Special Session of 2014, Tesla's commitment to Nevada and Nevada's education system was clear. Through this commitment, Tesla agreed to a direct contribution of \$37.5 million to K-12 education as well as a grant to UNLV to help facilitate battery research.

This last month, the research partnership with UNLV was formalized through the official signing of the agreement at a press conference with Governor Sandoval, GOED Director Steve Hill, Tesla's Diarmuid O'Connell, UNLV President Len Jessup, and UNLV's Tom Piechota.

The initial phase of the five-year agreement between Tesla and the University includes two projects led by UNLV engineers and scientists to enhance manufacturing processes at Tesla's northern Nevada Gigafactory.

A team of UNLV engineering researchers will focus on water recycling and treatment, and a separate team of UNLV President Len Jessup and Tesla's Diarmuid O'Connell make official the research partnership between the company and the University.

chemists will work to improve recycling of metals from lithium ion batteries.



LEARN MORE

www.unlv.edu/news/article/unlv-tesla-motors-form-research-partnership

Station Casinos Previews Games Created by UNLV Students

Station Casino's top players met UNLV student game inventors to preview five new table games straight out of the University's Center of Gaming Innovation (CGI).

CGI is supported through a grant from GOED's Knowledge Fund and helps students develop gaming concepts into commercially viable gaming products.

The five games that were previewed were all variations of traditional casino games, including blackjack, pai gow, baccarat, poker and war. UNLV students dealt the games to players who offered live feedback to the students. Players also had the opportunity to fill out comment cards to help determine if, one day, any of the games might be played on the casino floor.

UNLV's gaming innovation program is central to the State's effort to strengthen Las Vegas' role as the intellectual capital for global gaming.

In its first two years, the Center has filed 25 provisional patent applications, three new companies have been formed, and nearly a dozen student patents have been sold.



John Nguyen deals Show Pai, a table game of his creation, during the First Look Gaming Preview of table games at Red Rock Casino Resort and Spa. (R. Marsh Starks / UNLV Photo Services)



READ MORE

www.unlv.edu/news/release/proof-patent

www.unlv.edu/news/article/only-vegas-station-casinos-previews-unlv-student-created-games-showcase

GOED's LEAP Program Wins 2015 Workforce Development Award

Through a nomination submitted by the Washoe County School District, the Learn & Earn Career Pathways (LEAP) to Manufacturing was awarded the Optimas Silver Award for Managing Change.

Since 1991, the Optimas Awards celebrate HR's success at solving some of the biggest business challenges of our time. Each year, the Optimas Awards are given by Workforce magazine to recognize human resources and workforce management initiatives that achieve business results for the organization.

In its submission, WCSD wrote:

"LEAP is a result of a year-long collaboration with a variety of local agencies and stakeholder groups to address significant employee shortages in areas of advanced manufacturing, which has been identified as Nevada's future, highest growth sector. . .the resulting 3+2+3 pathways plan, features stackable skill development, certifications and degree opportunities from high school through 4-year degree, is being implemented this fall, 2015 at the high school and community college levels."

Source: www.workforce.com/articles/21723-washoe-county-school-district-optimas-silver-winner-for-managing-change



LEARN MORE

www.diversifynevada.com/uploads/newsletters/April_2015_Economic_Pulse.pdf

Performance Indicators

Annual Assisted Company Statistics

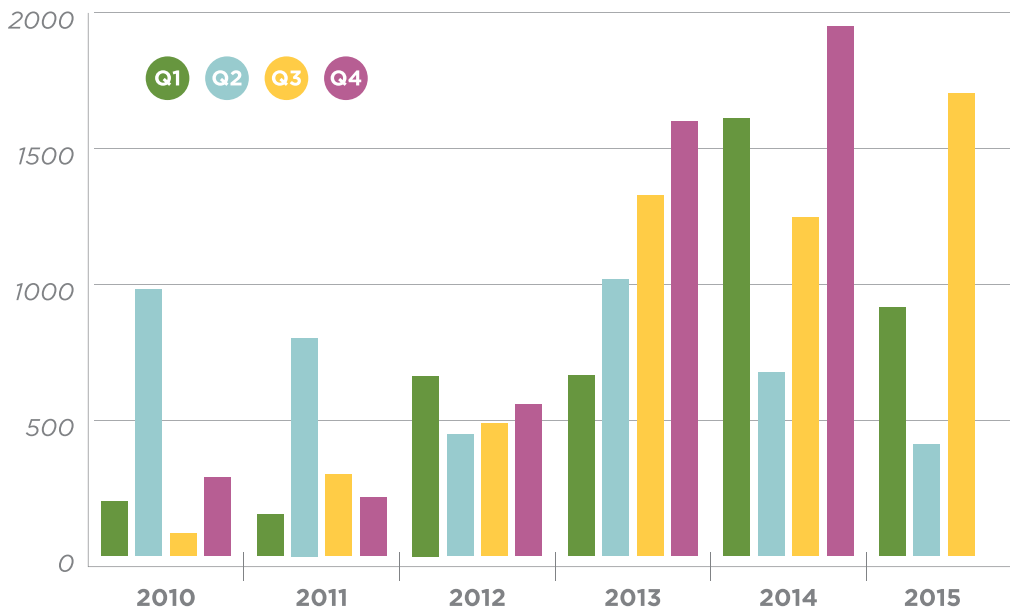
Through the third quarter of calendar year 2015, 71 assisted companies have added 3,030 jobs to Nevada's economy. This reflects an average company size of 43 workers.

INCENTED COMPANIES			
Year	Companies	Assisted Jobs	Avg. Wage
2009	14	467	\$16.88
2010	10	330	\$18.65
2011	19	1,091	\$17.46
2012	22	788	\$20.08
2013	55	3,152	\$18.94
2014	32	3,807	\$21.16
2015 YTD	43	1,777	\$27.77

NON-INCENTED COMPANIES		
Year	Companies	Assisted Jobs
2009	15	731
2010	22	1,226
2011	23	381
2012	52	1,368
2013	58	1,460
2014	65	1,677
2015 YTD	28	1,253

Jobs Announced by Assisted Companies

There were 1,704 assisted jobs added to Nevada's economy in the third quarter of 2015. These jobs were brought by 37 companies; 19 are new to Nevada and 18 are existing companies expanding operations. Of the 37, 10 were manufacturers, nine were aviation related, and six were information technology companies.



News

EBAY PLANNING TO INVEST \$412 MILLION IN NEVADA

eBay went before the GOED Board at the November meeting with an application for approval that would result in a \$412 million investment by the company to expand its operations in Nevada. The GOED Board unanimously approved the application. eBay's interest in Nevada is a sign that the State's tax incentive is an important component to luring industry leaders to Nevada to grow its data resource and cloud technology industry.



READ MORE

www.vegasinc.com/business/2015/nov/10/ebay-planning-to-make-412m-investment-to-expand-in/

Upcoming events

SNTIC MEETING

January 28 May 26
February 25 June 26
March 24 July 28
April 28

9am

*UNLV Foundation Building,
Blasco Wing*

GOED BOARD MEETING

January 22 @ 1pm

*Grant Sawyer Building, Las Vegas
Guinn Room, Nevada Capitol
Building, Carson City*

KNOWLEDGE FUND ADVISORY COUNCIL MEETING

February 18 @ 1pm

*DRI locations in both northern
and southern Nevada*

Board Members

Governor Brian Sandoval, *Chairman*

Lieutenant Governor

Mark Hutchison

Secretary of State Barbara Cegavske

Mr. Benjamin Yerushalmi,
Owner, The Jewelers of Nevada

Mr. Daniel Klaich,
*Chancellor, Nevada System of
Higher Education*

Mr. Don Soderberg,
*Director, Department of Employment,
Training & Rehabilitation*

Ms. Kathleen Drakulich,
*Attorney at Law,
McDonald Carano Wilson*

Mr. James Barrett,
President, The JABarrett Company

Mr. Rob Roy, *CEO/Founder,
Switch Communication*

Mr. Sam Routson,
*Chief Administrative Officer,
Winnemucca Farms*

Mr. Weldon (Don) Havins, MD, JD,
*Professor and Director of Medical
Jurisprudence and Ophthalmology,
Touro University Nevada*

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