



## UAS and SmallSat Weekly News

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### Aeryon Partners with HAZON Solutions to Provide Next-Gen Secure Aerial Inspections June 14, 2018 Mapping and Surveying



Aeryon Labs Inc, a manufacturer of Unmanned Aircraft Systems (UAS) for military, public safety, and commercial customers, today announced its partnership with HAZON Solutions, a drone service provider focused on infrastructure inspections for energy and utility customers throughout North America.

“As utilities learn more about the cybersecurity risks inherent with operating drones, they are increasingly turning to Aeryon UAS to inspect their transmission towers, power plants, pipelines, and other critical infrastructure assets,” said Bill McHale, CEO of Aeryon Labs. “Aeryon’s SkyRanger UAS, coupled with HAZON’s expert pilots, instructors, and support staff, provides a **secure drone-based inspection solution** for energy and utility customers.”

“HAZON’s primary focus is delivering inspection services to those companies with significant investments in critical infrastructure,” said David Culler, CEO and Co-Founder of HAZON Solutions. “Aeryon’s high-performance UAS directly address the security concerns of many of our clients. By merging the best hardware technology on the market with the best industry service provider – we provide our clients with a complete end-to-end solution for secure aerial inspections at scale.” [http://uasweekly.com/2018/06/14/aeryon-partners-with-hazon-solutions-to-provide-next-gen-secure-aerial-inspections/?utm\\_source=newsletter&utm\\_medium=email&utm\\_campaign=uasweekly\\_newsletter\\_2018\\_06\\_14&utm\\_term=2018-06-14](http://uasweekly.com/2018/06/14/aeryon-partners-with-hazon-solutions-to-provide-next-gen-secure-aerial-inspections/?utm_source=newsletter&utm_medium=email&utm_campaign=uasweekly_newsletter_2018_06_14&utm_term=2018-06-14)

### IAI and Airbus Enter \$600 Million Agreement to Lease Heron UAS To German Defense Ministry June 14, 2018 Military | News



Israel Aerospace Industries (IAI) signed an agreement with Airbus to lease Heron TP Medium Altitude Long Endurance (MALE) RPASs (remotely piloted air vehicle system) to Germany’s Federal Ministry of Defence. Under the \$600 million deal, Airbus DS Airborne Solutions GmbH will serve as the prime contractor responsible for managing all aspects of the project, including operational support and maintenance throughout the term of the



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agreement. The nine-year agreement is pending approval of the German federal budget, which is expected in the second half of 2018.

The Heron TP MALE is a high altitude, long endurance, strategic, versatile and multiple-payload RPAS, which features IAI's most advanced technologies. The system has been in service with the Israel Air Force since 2010.

Shaul Shahar, IAI EVP and General Manager of the Military Aircraft Group, said, "We are thrilled and proud of this agreement with the Federal Ministry of Defence, a major strategic customer. We regard it as a powerful symbol that the technology of Israel's largest defense company will be used in the heart of Germany's defense organization."

[http://uasweekly.com/2018/06/14/iai-and-airbus-enter-600-million-agreement-to-lease-heron-uas-to-german-defense-ministry/?utm\\_source=newsletter&utm\\_medium=email&utm\\_campaign=uasweekly\\_newsletter\\_2018\\_06\\_14&utm\\_term=2018-06-15](http://uasweekly.com/2018/06/14/iai-and-airbus-enter-600-million-agreement-to-lease-heron-uas-to-german-defense-ministry/?utm_source=newsletter&utm_medium=email&utm_campaign=uasweekly_newsletter_2018_06_14&utm_term=2018-06-15)

### Japan Moves Closer to Drone Delivery with New BVLOS Regulations Miriam

McNabbon June 12, 2018



Japan is moving one step closer to drone delivery, with a new change in the law requiring a visual observer for drone flights.

"A law requiring that a safety assistant be present during long-distance commercial drone operations **will be scrapped**, according to new rules announced Thursday by the transport and industry ministries," [says the Japan Times](#).

Japan is one of few countries active in the drone industry that does not currently allow flight beyond visual line of sight (BVLOS.) Japan's Prime Minister Shinzo Abe has frequently referred to the drone industry as part of "the fourth industrial revolution," as has said that Japan will not be left behind. The new rules indicate that authorities will only grant permissions for BVLOS flight without an assistant as long as the operator has a safety record and the drone flies below 150 meters.

Japan has been moving towards drone delivery for remote and rural areas – and this change will remove one of the remaining regulatory barriers. <https://dronelife.com/2018/06/12/japan-moves-closer-to-drone-delivery-with-new-bvlos-regulations/>



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### European Parliament Votes in Favor of EASA Basic Regulation: “It’s a Good Day for the Drone Industry in Europe” Miriam McNabbon June 12, 2018



“It’s a good day for the drone industry in Europe,” says Paula Iwaniuk of [Drone Manufacturers Alliance Europe](#) (DMAE). The European Parliament has voted in favor of the European Aviation Safety Agency’s (EASA) Basic Regulation.

The “Basic Regulation” has general application under EU rules. “It is binding in its entirety and directly applicable in all Member States,” [explains EASA](#). “The main objective of the BR is to “establish and maintain a high uniform level of civil aviation safety in Europe.””

One very significant point of the regulation is the **creation of risk-based categories**. This framework is considered favorable for the industry: if clearly defined, a risk-based framework based on factors of size or weight makes it easier for manufacturers to meet regulatory requirements. “The EASA Basic Regulation creates three types of risk-based categories for drones, which are crucial in setting benchmarks and developing proportionate drone rules,” says DMAE. “The so-called “open category” comprises the largest share of the light weight drones flying in low risk scenarios today.” <https://dronelife.com/2018/06/12/european-parliament-votes-in-favor-of-easa-basic-regulation-its-a-good-day-for-the-drone-industry-in-europe/>

### Drones for Good: UNICEF is Calling on Drone Operators for Vaccine Delivery Miriam McNabbon June 14, 2018

Calling all drone operators – here’s your chance to save lives and see the world. UNICEF Pacific has put out a worldwide [request for tender \(RTF\) to drone companies](#) who could deliver vaccination supplies in the remote Republic of Vanuatu.



This is Vanuatu – a Y-shaped archipelago consisting of 83 volcanic islands, running 1600 km north to south. 65 of the islands are inhabited: only 20 have roads or airfields. Many are accessible only by boat.



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On 28 June 2017, the UNICEF Innovation team tests an unmanned aerial vehicle carrying a cargo payload box, which can potentially carry humanitarian supplies at Kasungu Aerodrome in central

UNICEF is looking for several drone delivery providers to service these islands, providing life-saving vaccines to the children of Vanuatu. The tender closes on June 20, and to attract as many applicants as possible, UNICEF reached out to DRONELIFE to help get the word out. After the tender process closes, selected providers will run trials to outlying island locations between September and November.

Interested service providers should [see the RFT here](#) – and **please spread the word** about this important project. <https://dronelife.com/2018/06/14/drones-for-good-unicef-is-calling-on-drone-operators-for-vaccine-delivery/>

**17Jun18**

## **Drones hold promise to save lives and improve rural healthcare** Modern Healthcare

Things are looking up: drones could soon start **delivering medications in medical deserts** in the rural U.S. The Federal Aviation Administration approved 10 pilot programs for drone usage in May, including projects that specialize in medical deliveries in San Diego and North Carolina.



Drones have been successfully used a number of times internationally to improve healthcare. Currently, health workers at remote clinics in Rwanda can order supplies via text messages, and Zipline, a commercial drone company based in California, will air-drop the delivery—sometimes within 15 minutes.

Drones that have been tested in the U.S. have shown promise for improving the nation's rural healthcare. July 15, 2015, marked the first time medicine was delivered and received by drone in a rural area, in Wise County, Va., during the Wise Expedition—one of the largest annual medical outreach events in the country.

After a massive EF4 tornado ripped through Hattiesburg, Miss., in 2013, researchers at William Carey University College of Osteopathic Medicine began rethinking how to respond to medical



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emergencies during disasters. The result: the Healthcare Integrated Rescue Operations project, known as HiRo, which uses a modified drone capable of carrying a 20-pound medical kit.

The possibilities for drones in healthcare are vast. They can help deliver lab tests to diagnose patients faster, distribute contraceptives, help disaster victims with necessities and more. The sky's the limit. <http://www.modernhealthcare.com/article/20180609/NEWS/306099951>

18Jun18

### Drone giant DJI is building a new headquarters as a 'floating community' with a giant sky bridge to test drones Thomas Catenacci 17 June 2018 CNBC.com

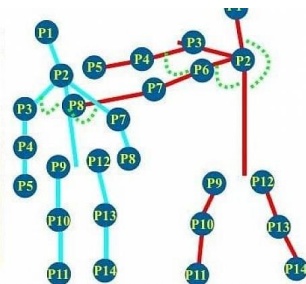
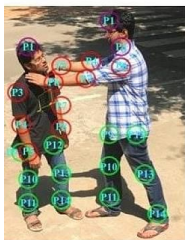


Chinese drone giant [DJI](#) is building the headquarters of the future. The company, known for making popular consumer drones, teamed up with Foster + Partners, a leading architectural firm, to design a new home base in Shenzhen, China.

The building was designed to resemble a "floating community in the sky," and will feature twin towers connected by a sky bridge/ DJI plans to show off new drone technology from that bridge, while also holding formal product launches in a new theater.

The magnitude of this new headquarters reflects positively on the market position of DJI. Global Consumer Insights projects the growing drone market to be worth **\$17 billion by the year 2024**. According to Reuters, DJI controls roughly [70 percent](#) of the global consumer drone market. <https://www.cnbc.com/2018/06/15/dji-futuristic-new-headquarters.html>

### Surveillance drones could prevent attacks before they happen June 15, 2018 Feilidh Dwyer



New specially equipped surveillance drones in the United Kingdom have the potential to identify violent acts and attacks before they occur.

[The Telegraph reports](#) that in the aftermath of the horrific terrorist attack at Ariana Grande's concert in Manchester last year, researchers at Cambridge

University began to investigate the efficacy of drones in preventing public acts of violence. The stakes for preventing these sorts of events are high: the Manchester attacks instantly resulted in 23 deaths, 800 injuries and trauma for tens of thousands of people.



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The researchers **trained drone cameras to recognize various acts of violence** simulated by a pair of actors. The actors would pretend to stab, shoot, punch, kick, strangle and otherwise hurt each other. When the drone identifies such a behaviour, it can notify a human observer who takes appropriate responsive action. Lead researcher of the project, Amarjot Singh, told the Telegraph that the technology was currently nearly 95 percent accurate.

[https://www.wetalkuav.com/surveillance-drones-could-prevent-attacks-before-they-happen/?utm\\_source=WeTalkUAV&utm\\_campaign=f8addb9c36-RSS\\_EMAIL\\_CAMPAIGN&utm\\_medium=email&utm\\_term=0\\_1d410cb84d-f8addb9c36-83642867](https://www.wetalkuav.com/surveillance-drones-could-prevent-attacks-before-they-happen/?utm_source=WeTalkUAV&utm_campaign=f8addb9c36-RSS_EMAIL_CAMPAIGN&utm_medium=email&utm_term=0_1d410cb84d-f8addb9c36-83642867)

**NRL Increases UAV Endurance with Solar Soaring Technology** Raeanna Morgan, U.S. Naval Research Laboratory Public Affairs

WASHINGTON (NNS) -- Researchers at the U.S. Naval Research Laboratory (NRL) are developing technology for unmanned aerial vehicles (UAV) that has given them the ability to fly for more than **12 hours** by **harvesting energy from the atmosphere and the sun**.



"With Solar-Soaring, the UAV doesn't need a huge battery because it is getting energy from the environment," said Edwards. "It just carries more intelligent software in the case of the autonomous soaring algorithms, or a lightweight, integrated solar array that captures much more energy from the sun compared to the amount of mass."

Since 2005, Edwards has been exploring how to **teach an autopilot how to soar** using thermals in the atmosphere. Using special sensing and guidance algorithms, the UAV flies a waypoint route until it senses a **thermal updraft**, then commands the aircraft to circle in the rising air. "Between the two, you have the most robust energy-harvesting platform, because sometimes you'll be able to soar and sometimes you won't have the solar, and vice versa," said Jenkins.

"We still can't fly through the night because the batteries are just too heavy, but we currently get down to dusk-enhanced endurance," said Jenkins. For Edwards, the next step in solving this problem is swapping out the battery for a **hydrogen fuel cell**. [http://www.navy.mil/submit/display.asp?story\\_id=105988](http://www.navy.mil/submit/display.asp?story_id=105988)



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### US defence department awards Six3 USD48.6 million C-UAS contract June 12, 2018

Philip Butterworth-Hayes Counter-UAS systems and policies



Six3 Advanced Systems Inc., Dulles, Virginia, has been awarded a USD48.6 million indefinite-delivery/indefinite-quantity contract that provides integration, installation, sustainment, and engineering services to the AIRWorks Rapid Development Capabilities Integrated Product Team in support of the deployment of new and existing **counter unmanned aerial systems capabilities** and hardware “to high priority and sensitive government sites that protect assets vital to national security.”

According to the US Department of Defense: “This contract provides technical, engineering and project management support services to include modeling and simulation, hardware integration, software integration, and command and control integration. Work will be performed in San Diego, California (19 percent); Washington, District of Columbia (9.5 percent); **Norfolk, Virginia (9.5 percent)**; Sterling, Virginia (9.5 percent); Seattle, Washington 9.5 percent; Jacksonville, Florida (9.5 percent); China Lake, California (6.3 percent); Leonardtown, Maryland (4.8 percent); Yuma, Arizona (3.2 percent); Dugway Proving Ground, Utah (3.2 percent); and various locations outside the continental U.S. (16 percent), and is expected to be completed in May 2019. This contract was not competitively procured. Six3 is part of the CACI International Group of Companies. <https://www.unmannedairspace.info/counter-uas-systems-and-policies/us-defence-department-awards-six3-usd48-6-million-c-uas-contract/>

### Airbus signs major European military UAV contract BUSINESS HEADLINE NEWS NEWS TECHNOLOGY EMMA CALDER JUNE 18, 2018



The European aeronautical company and the Federal Office of Bundeswehr Equipment, Information Technology and In-Service Support (BAAINBw) have signed an operator agreement for Heron TP unmanned aerial systems.

Under the terms of the basic contract, the Bundeswehr will receive five aircraft equipped for reconnaissance missions and capable of carrying weapons, four sets of ground segments, training environments and all system operational services. The systems are equipped with electro-optic and infrared sensors and imaging radar systems to perform reconnaissance tasks. Satellite communication systems and German data and voice encryption systems are also part of the configuration.





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The project will have a two-year set-up phase, followed by an operational phase lasting a further seven years, thereby bridging the gap until a **sovereign European drone** will be developed. <http://www.commercialdroneprofessional.com/airbus-signs-major-european-military-uav-contract/>

**19Jun18**

### **Large UAS will reshape deliveries and aviation** June 19, 2018 Thomas Luna

Large unmanned aircraft systems are being designed to one day transport shipping containers, deliver Wi-Fi and even fly people without a pilot.



The Aerospace Industries Association of America estimated that the large UAS market in the United States has potential to generate nearly **\$150 billion in total spending and 60,000 jobs by 2036.**

Large UAS are currently being designed to one day fight fires or even rescue people in areas where helicopters have trouble reaching. A company called Tactical Robotics successfully tested a vertical take-off and landing (VTOL) UAV that can fly better than a helicopter in dense areas thanks to its concealed, internal-lift rotor design.



The 1.5-ton VTOL UAV is called **Cormorant**, and it can extract wounded soldiers or deliver cargo up to 1,100 pounds, including water for fighting fires.

**Uber** announced plans to create drone taxis, and people will one day be able to fetch a ride through an app. Even though the first drone taxis are estimated to fly with a human pilot,

Uber's goal is to send passengers from points a to b autonomously.



Kenyan-based Astral Aviation has also shown interest in the large UAS industry, and they are supposed to launch the first cargo drone operation in Africa by the end of the year. The company said they will transport mail and parcels for mining, oil and gas companies, provide spray services for agricultural



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purposes and transfer books to schools in remote areas. Astral Aviation has a \$1.5 million drone called the FlyOx, which can carry **4,400 pounds of cargo and fly 800 miles**.

Machine-learning algorithms, cyber security, communications and countless hours of testing must first be conducted before large UAS become a reality. Even though it'll take years before pilotless drones take over the delivery and aviation industry, there are already companies today paving the way for tomorrow's drones. <https://www.wetalkuav.com/large-uas-will-reshape-deliveries-and-aviation/>

### Endurance Flight without a Helicopter: Drone Tech Firm Harris Aerial

**Demonstrates LiDAR with Carrier H4 Hybrid** Miriam McNabbon: June 18, 2018



Aerial LiDAR surveys aren't new technology – but now U.S. – based [Harris Aerial](#) has demonstrated a new and **ground-breaking** way of performing them.

LiDAR surveys provide critically accurate survey data, allowing for the creation of precise 3D models. LiDAR attached to a helicopter or other manned aircraft have been used for over 50 years in applications like natural hazard assessment for lava flows or tsunamis, forestry, agriculture, river and watershed surveys, and climate research.

Surveys performed by manned aircraft, however, are prohibitively expensive for most industries. Surveys performed by drone are far less expensive and easier to implement, but also have their limitations. The short flight time can make a drone solution impractical for larger missions.

That's why Harris Aerial, one of the world leaders in developing new drone technology, has partnered with [LiDAR USA](#) and Skytec to demonstrate the capabilities of LiDAR sensors on its Carrier H4 Hybrid Drones. "Traditional LiDAR surveys are extremely pricey – a one-day survey can range more than six figures," says Ben Harris, president of Harris Aerial. "By using our hybrid drones, we are able to replace the cost of jet fuel and a plane, yet still spend enough time in the air to complete the survey."

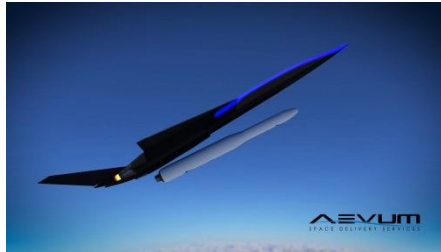
The Carrier H4 Hybrid drone can fly uninterrupted carrying LiDAR equipment **for two and a half hours**. In addition to the extended flight, the Carrier H4 Hybrid has the largest capacity for carrying payload on the market. <https://dronelife.com/2018/06/18/harris-aerial-demonstrates-lidar-with-carrier-h4-hybrid-drone/>



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### Aevum's New Rocket-Drone Airplane Duo Could Launch Satellites Every 3 Hours

Charles Q. Choi, Space.com Contributor | June 18, 2018



A space launch every 3 hours may soon be possible using [rockets](#) carried on a fully autonomous unmanned airplane, a new startup company suggests.

"The typical turn time, from landing to takeoff, for a commercial aircraft can range from 30 to 80 minutes," said Skylus, an aerospace engineer who worked at NASA and

Boeing. "Ravn operates just like a commercial aircraft would." Ravn could launch satellites as frequently as once every 3 hours.



Aevum is focused on launching [multitudes of tiny satellites](#) into space.

"Ravn takes off and lands horizontally on any standard runway, and is engineered to be [autonomous](#) from the moment it leaves the hangar from taxi, takeoff, launch, landing and taxi return to the hangar." As such, Ravn may need a ground crew of as few as six people, Skylus said.

In flight [simulations](#), "Minnie, Aevum's autonomous flight software, has already completed nearly 640 flights," Skylus said. This work included the successful simulated launch "of a 30-satellite constellation in less than 3 hours," he added.

Aevum is working toward beginning flight testing in 2019. If the entire flight test campaign goes according to plan, Aevum has three launches planned for the fourth quarter of 2019, Skylus said. "We're always seeking to connect with more customers — there's still some capacity on these three launches," he said. <https://www.space.com/40918-air-launched-rocket-ravn-aevum.html>

### Black Swift Technologies Awarded NASA Contract to Develop UAS for Atmospheric Observations of Venus

June 18, 2018 News



[Black Swift Technologies](#) (BST) announced today it has been awarded a NASA contract to develop an unmanned aircraft system to perform upper atmospheric observations of the planet Venus.



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BST is proposing a planetary aerial vehicle based on **dynamic soaring**, a proven method to extract energy from atmospheric shear that has propelled the fastest small-scale aircraft in the world and provided the energy necessary for long-endurance low-level flights of birds across oceans. "Our solution will be designed to not only survive in the harsh wind environment, but also simultaneously perform targeted sampling of the atmosphere **while continuously extracting energy**, even on the dark side of the planet."

Despite the fact that the surface temperature of Venus is hotter than any other planet in the Solar System at 467°C, the atmospheric pressure and temperature at about 50 km to 65 km above the surface of the planet is nearly the same as that of the Earth.

"Black Swift Technologies has provided aerial solutions for wildland fires, volcanic observations, tornadoes, and hurricanes—some of the most extreme phenomena on Earth," Elston says. "This mission is a natural extension of our focus, only now we are concentrating on the extreme conditions of Venus." [http://uasweekly.com/2018/06/18/black-swift-technologies-awarded-nasa-contract-to-develop-uas-for-atmospheric-observations-of-venus/?utm\\_source=newsletter&utm\\_medium=email&utm\\_campaign=uasweekly\\_newsletter\\_2018\\_06\\_18&utm\\_term=2018-06-18](http://uasweekly.com/2018/06/18/black-swift-technologies-awarded-nasa-contract-to-develop-uas-for-atmospheric-observations-of-venus/?utm_source=newsletter&utm_medium=email&utm_campaign=uasweekly_newsletter_2018_06_18&utm_term=2018-06-18)

### **ALTI Develops Hybrid VTOL Fixed-Wing UAVs for Commercial Applications** 19 Jun 2018 Mike Rees

[ALTI UAS](#), a developer and manufacturer of commercial unmanned aircraft systems, has partnered with Unmanned Systems Technology to demonstrate their expertise in this field. The 'Silver' profile highlights how their VTOL hybrid unmanned aircraft can be fielded for a wide variety of applications, including agriculture, infrastructure inspection, mapping and surveying, and security.



The [ALTI Transition](#) is a fixed-wing UAV with VTOL and hover capabilities designed for everyday civil and commercial use. It features a modular airframe that can be set up in under ten minutes and requires no runway or catapult to get airborne. Once aloft, the aircraft transitions into forward wing-bound flight for the duration of the mission. A smooth and level back transition into a solid hover allows the Transition to land virtually anywhere, quickly, reliably and safely.



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The hybrid electric-fuel system provides an **endurance of up to 12 hours**. The ultra-lightweight carbon fuselage and aerodynamic design provide a low stall speed, efficient cruise with very low drag, stability in high winds and a weight of 16kg.

It includes an autopilot system, GPS, sensors, redundant flight control, stall speed detection, overbank protection and velocity checks. The Transition's open payload bay allows users to field a wide variety of sensors for flexible mission requirements.

[http://www.unmannedsystemstechnology.com/2018/06/alti-develops-hybrid-vtol-fixed-wing-uavs-for-commercial-applications/?utm\\_source=Unmanned+Systems+Technology+Newsletter&utm\\_campaign=e0172b4c54-eBrief\\_2018\\_June\\_19&utm\\_medium=email&utm\\_term=0\\_6fc3c01e8d-e0172b4c54-119747501](http://www.unmannedsystemstechnology.com/2018/06/alti-develops-hybrid-vtol-fixed-wing-uavs-for-commercial-applications/?utm_source=Unmanned+Systems+Technology+Newsletter&utm_campaign=e0172b4c54-eBrief_2018_June_19&utm_medium=email&utm_term=0_6fc3c01e8d-e0172b4c54-119747501)

### **Indigenous people in the Amazon are using drones to save their land** Ellie

Anzilotti/Jun 7, 2018



Last year, residents of the indigenous northern Peruvian communities that populate the Amazonian rainforest between Yurimaguas and Lagunas noticed the beginnings of a new highway running through their lands. New roads through the Amazon often mean that logging and mining companies are preparing to move into the region to harvest its natural resources and plant large, single-crop plantations that wreck the region's biodiversity. Compounding the issue was the fact that the road was not authorized by the Peruvian Ministry of Transport and Communications.

The indigenous communities needed incontrovertible proof that the road was being built to present the government with information that would compel legal action to stop it. They got that evidence in the form of [drone imaging](#). The Interethnic Association for the Development of the Peruvian Rainforest ([AIDSESP](#)), an indigenous rights organization, recently partnered with Oxfam to deploy a drone to indigenous communities facing land rights infringements. In the case of the road, which was being built by a palm oil company, the indigenous communities were able to show footage to government agencies, which led to a **halt on construction**.

AIDSESP holds the drone at its main office in Lima, and deploys it out for use when one of the 109 indigenous communities it coordinates with detects an invasive development to document. With around \$25,000 in funding from Oxfam, AIDSESP sourced the drone and hosted trainings through the Amazonian rainforest to instruct community leaders in how to use it.

<https://flipboard.com/@flipboard/-indigenous-people-in-the-amazon-are-usi/f-573abe39fe%2Ffastcompany.com>



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### UNIVERSITY OF COLORADO AND OTHERS COLLECT DATA ON MONSTER STORM USING UAS AUVSI NEWS JUN 18, 2018



A team of aerospace engineers from the University of Colorado (CU) recently spent the first half of June traveling across the Midwest in search of monster storms.

During this time period, the CU team, which was made up of 16 CU employees and students, encountered a storm on June 8 outside Norris, South Dakota, and used one of its three "TTwistor" UAS to fly through the dark skies to collect data from the storm.

Equipped with specialized UAS that they have spent years building and honing, the CU team met meteorologists from the University of Nebraska-Lincoln and Texas Tech University, who plan to use the UAS data to improve understanding and forecasting of tornadoes.

**"We just drove straight to the storm,** and the storm came right to us," Frew says. Some of the footage picked up by the UAS' tail camera shows massive, dark clouds; a glowing blue patch where hail formed; and flashes of lightning. The group traveling towards the storm turned around when the scout car encountered hail, as the UAS cannot fly through sustained hail.

This initiative was the culmination of a three-year grant by the National Science Foundation, but Frew notes that their work and partnerships are ongoing, and anticipates continuing to learn and chase storms with them.

"These are measurements that the meteorology world wants, and you cannot get without being in the storm," Frew says. "That's the key." <http://www.auvsi.org/industry-news/university-colorado-and-others-collect-data-monster-storm-using-uas>

### The U.S. is opening prime urban sky to commercial drones 06.19.18 BY SEAN CAPTAIN

A major barrier for commercial drones falls this summer, as the Federal Aviation Administration rolls out an app-connected online service that **cuts the response time on flight requests from three months to just a few seconds.** The service is called Low Altitude Authorization and Notification Capability, abbreviated [LAANC](#) and pronounced "lance." Using LAANC-connected mobile apps, drone pilots select areas they want to fly in and get a yes or no back in near real time. LAANC can even be connected to the remote-control apps that pilots use to fly their



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drones, allowing the apps to prevent pilots from straying too high or outside the permitted areas.

On April 30, the Federal Aviation Administration switched on LAANC in a region including Texas, New Mexico, Arizona, and Louisiana. Each month, it comes to another six regions, until about 500 airports across the country are included. Wave three of the rollout, on June 21, includes California and Hawaii. All of the nation's significant public airports are scheduled to be included in the program by September 13. <https://www.fastcompany.com/40575736/the-us-is-opening-prime-urban-sky-to-commercial-drones>

**20Jun18**

### **Swiss drone company moves its North American headquarters to Raleigh** RAY

GRONBERG [rgronberg@heraldsun.com](mailto:rgronberg@heraldsun.com) June 20, 2018



*Duke associate professor Dr. Dave Johnston holds a senseFly eBee, a 1.5 lb foam research drone that is a workhorse of the UAS facility's marine science and conservation studies.*

Drone maker senseFly moved its North American hub to Raleigh this week, trading its home in downtown Washington, D.C., for new quarters near Fuquay-Varina.

The 9-year-old company settled on Raleigh so it can capitalize on the talent that's emerging from N.C. State University, Duke University and UNC-Chapel Hill, company officials said, name-checking the region's large research schools specifically.

Washington was "a great place for us to start" while the Federal Aviation Administration was working on its first rules for drones, but now "what we need to be focusing on is serving our customers to the best of our ability," senseFly spokeswoman Jessica Sader said.

"**The main attraction is the talent pool**," she added. "We're always looking for the brightest and best people to join our team, and we're lucky now to be in an area where there's a lot of people who could potentially join the team."

SenseFly joined the N.C. State-based [NextGen Air Transportation Consortium](#) and also secured a memorandum of understanding with the university that addresses facility sharing, the hiring of interns and cooperation with the [College of Agriculture and Life Sciences](#), said [Kyle Snyder](#), the consortium's director.



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SenseFly makes [a family of fixed-wing drones](#) it calls the [eBee](#), and a quadricopter called the [albris](#). They're geared for professional use in mapping, survey work and other applications, not the consumer market. <https://www.newsobserver.com/news/business/article213530609.html>

### **Researchers work on making smaller chips for drone brains** Shane McGlaun - Jun 20, 2018

MIT scientists and researchers are tackling an issue that poses a difficult challenge for drone operators and designers of the future. Engineers at the school are working on shrinking down drone technology and have built prototypes that are **the size of a bumblebee**.



The challenge is that standard computer chips for quadcopters and other drones of the same size process lots of data and therefore consume lots of power and are often large. Drones can slurp as much as 10-30 watts of power and fitting the drone with batteries large enough for the power demand would weight down smaller drones the size of bees. MIT has

developed a new computer chip that consumes only a fraction of the power of existing chips.

That researchers call it "Navion", and it is tailored to drones **as small as a bottle cap**.

Researchers developed a low-power algorithm along with pared-down hardware to create a specialized computer chip. Researcher Vivienne Sze says that normally you send an algorithm to a hardware person to figure out how to map the algorithm to the hardware. Sze says that the team figured out that to design the hardware and algorithm together allowed a more substantial power savings. This is the key to scaling down hardware and algorithms says Sze.

<https://www.slashgear.com/researchers-work-on-making-smaller-chips-for-drone-brains-20534861/>

**21Jun18**

### **25 universities battle it out in UAV engineering throwdown** BUSINESS HEADLINE NEWS NEWS TECHNOLOGY by EMMA CALDER on JUNE 21, 2018



Engineering students from **Istanbul Technical University** have beaten 20 other teams to be crowned the winners of the UAS Challenge 2018 drone design competition, which is organised by the Institution of Mechanical Engineers (IMechE). The runner up was Team Athena from Southampton University

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and third place was awarded to Team Hawk from Huddersfield University.

The teams competed in a “fly-off” final on 18-19 June at the Snowdonia Aerospace Centre in North Wales. This year, the young engineers were challenged to design, build and operate a drone for a humanitarian aid mission.

Now in its fourth year, the competition has been growing steadily, with 21 teams taking part in 2018, over double the number in the inaugural event. This year’s event featured hybrid drones from Swansea University and Team Horus from Southampton which combined a helicopter’s vertical lift before converting into plane-mode for more efficient flight.

Team Nova from University College London designed a jet engine for their drone, the first time a jet engine had been seen in the competition. [http://www.commercialdroneprofessional.com/25-universities-battle-uav-engineering-throwdown/?utm\\_source=Email+Campaign&utm\\_medium=email&utm\\_campaign=45819-265502-Commercial+Drone+Professional+DNA++2018-06-21](http://www.commercialdroneprofessional.com/25-universities-battle-uav-engineering-throwdown/?utm_source=Email+Campaign&utm_medium=email&utm_campaign=45819-265502-Commercial+Drone+Professional+DNA++2018-06-21)

### **Drones See Positive ROI in Under a Year** Betsy Lillian June 20, 2018



Skyward, a Verizon company and a provider of drone operations management software and consulting services, has announced the results of a custom-built Blue Research survey showing that **one in 10 U.S. companies with revenue of \$50 million or more uses drones.** Furthermore, 92% have realized a positive return on investment (ROI) in one year or less, according to the survey. In addition, the report indicates drone use could reach 12% among this same market by the end of 2018.

Blue Research sampled 1,736 individuals working for a random mix of U.S. companies with \$50 million or more in revenue. Based on responses, the survey revealed that the highest adoption of drones is in construction and engineering (35%), followed by government organizations (24%). Moreover, 19% of the surveyed professionals indicated that their company currently uses or expects to use drones in the future.

Skyward says the results also show that drones can be integral to business operations: Half reported their company’s bottom line would suffer if the company did not use drones. It is fascinating to see how quickly these organizations are obtaining a positive ROI. Although still a fairly nascent market, these data suggest the market is well-poised to grow – and with good reason for doing so.”



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To obtain the data, Blue Research created a custom-designed, quantitative survey designed to “ensure reliable data and avoid bias.” The full report can be downloaded [here](#).

[https://unmanned-aerial.com/survey-most-large-companies-using-drones-see-positive-roi-in-under-a-year?utm\\_medium=email&utm\\_source=LNH+06-22-2018&utm\\_campaign=UAO+Latest+News+Headlines](https://unmanned-aerial.com/survey-most-large-companies-using-drones-see-positive-roi-in-under-a-year?utm_medium=email&utm_source=LNH+06-22-2018&utm_campaign=UAO+Latest+News+Headlines)

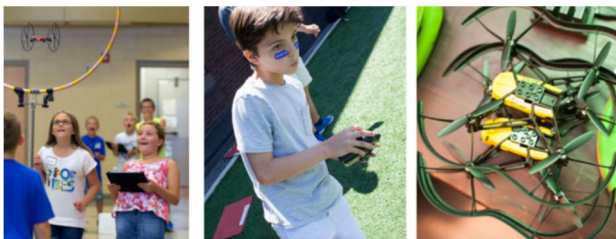
22Jun18

**STEM-based drone camps teaches kids how to code and fly drones!** June 20, 2018 Thomas Luna



The demand in drone technology has resulted in drone summer camps appearing all over the United States. Anyone can now learn how to safely fly a UAV with the help of professionals, and even kids can learn how to program drones. Some of these drone camps are designed with the **STEM curriculum**, so kids can learn science, technology, engineering and math while having fun.

Kids can attend different types of drone camps. Some camps offer pilot training, FPV racing or even engineering-based drone programs. There are companies like [Drobots](#) who offer STEM-based summer camps in 17 different states. Drobots has been recognized as the number one drone STEM program for kids and teens in the nation, and they are even a partner of NASA, according to [JCC Association of North America](#).



“We can teach kids to fly drones safely. It intertwines with the STEM program because we have pilots, we have engineers, scouts, and they’re all working together as a team in order to get the drones to fly and learn about safety as they move along,” said Drobots

instructor Natasha Riggins. [https://www.wetalkuav.com/stem-based-drone-camps-teaches-kids-safely-fly-drones/?utm\\_source=WeTalkUAV&utm\\_campaign=5b656e9cd8-RSS\\_EMAIL\\_CAMPAIGN&utm\\_medium=email&utm\\_term=0\\_1d410cb84d-5b656e9cd8-83642867](https://www.wetalkuav.com/stem-based-drone-camps-teaches-kids-safely-fly-drones/?utm_source=WeTalkUAV&utm_campaign=5b656e9cd8-RSS_EMAIL_CAMPAIGN&utm_medium=email&utm_term=0_1d410cb84d-5b656e9cd8-83642867)

## DRONE KILLER COUNTER-UAS TECHNOLOGY



The Drone Killer enables Defense and Security Forces to thwart the use of drones by criminals and enemy combatants for surveillance and direct attacks to drop bombs, grenades, and improvised explosive devices on

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fighting forces. It can also be used by First Responders and others to disable a drone being operated in restricted air space or when a drone is interfering with their operations.

It adds counter-UAS capabilities to mobile forces that cannot use large systems that add weight and require added power sources. It is **compact and light-weight**, able to be deployed from inside light vehicles or by dismounted warfighters in mobile units, strike teams, checkpoints, forward outposts, and security response teams. Mobile units with the Drone Hunter provide gap-filling coverage and pursuit capabilities that complement larger, more costly fixed-location automated UAS defense systems. <http://ixitech.com/products/drone-killer/>

**Patent request unveils Amazon's plans for warehouse UAVs** BUSINESS HEADLINE  
NEWS EMMA CALDER JUNE 20, 2018



***International e-commerce giant Amazon has placed drones at the centre of its plans to streamline its warehouse operations.***

Amazon has filed a patent request at the United States Patent and Trademark Office for a UAV specifically designed for use in its warehouses.

The disclosed unmanned aerial vehicle includes a buoyant airbag, a drive unit, a retention feature, and an **on-board control module** that can be configured to cause the drive unit to displace the UAV, cause the retention feature to retain one or more items for transport, and receive instructions to transfer items from one location to another.

The patent outlines that the UAV will be controlled to obtain an item at one location in a warehouse, such as a first floor, lift the item to a second location in the warehouse, such as a second floor, and deposit the item at the second location.

The company's drone delivery branch, Amazon Prime Air, remains in development, with patents being lodged for a delivery UAV earlier this year.

Amazon Prime Air is reportedly poised to roll-out operations for routine delivery towards the end of next year. [http://www.commercialdroneprofessional.com/patent-request-unveils-amazons-plans-warehouse-uavs/?utm\\_source=Email+Campaign&utm\\_medium=email&utm\\_campaign=45819-265613-Commercial+Drone+Professional+DNA+++2018-06-22](http://www.commercialdroneprofessional.com/patent-request-unveils-amazons-plans-warehouse-uavs/?utm_source=Email+Campaign&utm_medium=email&utm_campaign=45819-265613-Commercial+Drone+Professional+DNA+++2018-06-22)



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### Hero police drone pilot would love to see incidents reached in 20 minutes

BUSINESSHEADLINE NEWS EMMA CALDER JUNE 20, 2018



*A police drone pilot involved in locating a missing elderly Norfolk man who was trapped in mud has expressed his desire that officers will one day have the power to scramble a UAV to any incident within 20 minutes.*

Sergeant Danny Leach made national headlines earlier this week after Norfolk Police deployed a UAV to search for 75-year-old Peter Pugh, after his family raised the alarm when he did not return home from a walk. Sgt Leach, who was flying a DJI Inspire I, spotted Mr Pugh stuck in a dense reed beds and marshland and was **credited with saving his life**.

He told *Commercial Drone Professional* that the success of the mission underscored the importance of drone technology in emergency operations and outlined his hopes that future investments will mean drones will be able to reach remote locations in incredibly quick times.

He said: "I would like to see that there is the capability to be able to get a drone to any incident in a big county like this within 20 minutes. That would be a case of a dedicated unit, that would be ideal as they would have the experience that could be deployed anywhere 24/7, but most likely it would be that we have hubs across the county where you'll have a drone in a central location and you'll have a number of trained pilots."

[http://www.commercialdroneprofessional.com/exclusive-hero-police-drone-pilot-love-see-incidents-reached-20-minutes/?utm\\_source=Email+Campaign&utm\\_medium=email&utm\\_campaign=45819-265613-Commercial+Drone+Professional+DNA+++2018-06-22](http://www.commercialdroneprofessional.com/exclusive-hero-police-drone-pilot-love-see-incidents-reached-20-minutes/?utm_source=Email+Campaign&utm_medium=email&utm_campaign=45819-265613-Commercial+Drone+Professional+DNA+++2018-06-22)