
## UAS and SmallSat Weekly News

## Contents





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**5May18**

## Army Plans to Demonstrate Manned-Unmanned Aircraft Teaming Monica Jackson May 2, 2018 Latest News, Technology

The U.S. Army will possibly conduct a demonstration in late summer or early fall this year that involves launching an autonomous aircraft from a rotary-wing platform, Defense News reported Tuesday.

The service plans to deploy Area-I's *Air-Launched, Tube-Integrated Unmanned System* or ALTIUS from a *UH-60 Black Hawk* aircraft to provide an understanding on how launching drones at low-altitude can be applied in the battlefield. The demonstration will inform scientists about the air flows, interfaces and launch dynamics of the entire system to prepare for the actual launch.

The Army intends to use rocket pods or a Hellfire launcher that can deploy the UAS from a helicopter once the first test is completed. The Army envisions that future drones will be directly ejected from planes so they can be used for missions beyond surveillance and limited attacks. http://www.executivegov.com/2018/05/army-plans-to-demonstrate-manned-unmanned-aircraft-teaming-layne-merritt-comments/

## Gov. Cuomo Announces Partners to Develop New York Drone Testing Corridor Betsy Lillian May 2, 2018

New York Gov. Andrew M. Cuomo has announced that the state-supported Northeast UAS Airspace Integration Research Alliance has selected key partners in the development of New York's unmanned aircraft system (UAS) traffic management (UTM) corridor.

SRC / Gryphon Sensors and Raytheon have both received awards to complete the UTM corridor, which runs from central New York to the Mohawk Valley. The overall project will consist of system planning, design, implementation, commissioning, and operational support of UTM research, development, test and evaluation infrastructure.

In November 2016, Cuomo announced a $30 million state investment to develop the 50-mile flight traffic management system between Syracuse and Griffiss International Airport in Rome. The corridor will be designed to enable companies to test both UAS platforms and UTM



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technologies in real-world settings, generating data that will inform industry and regulators and advance the commercial use of drones. https://unmanned-aerial.com/gov-cuomo-announces-partners-to-develop-new-york-drone-testing-corridor?utm_medium=email&utm_source=LNH+05-03-2018&utm_campaign=UAO+Latest+News+Headlines

## Long-Range Penguin C Drone Joins Embry-Riddle's UAS Program Betsy Lillian May 2, 2018

The Unmanned Systems Sciences Program in the College of Aviation at Embry-Riddle Aeronautical University's (ERAU) Daytona Beach Campus has selected the Penguin C unmanned aircraft system (UAS) from UAV Factory for flight training with student drone pilots.

According to ERAU, the Penguin C aircraft is a long-endurance drone suited for surveillance and inspection. It is a runway-independent, fixed-wing aircraft capable of flight times in excess of 20 hours. It is also able to operate at distances up to 60 miles beyond the visual line of sight from a two-person ground control station. https://unmanned-aerial.com/long-range-penguin-c-drone-joins-embry-riddles-uas-program?utm_medium=email&utm_source=LNH+05-03-2018&utm_campaign=UAO+Latest+News+Headlines

## Insitu launches ScanEagle3 without ITAR restrictions 03 MAY 2018 FLIGHTGLOBAL.COM GARRETT REIM

Boeing-owned Insitu used the annual AUVSI gathering to unveil its ScanEagle3 unmanned air vehicle. The manufacturer is touting the UAV as a primarily commercial product that is free of the International Traffic in Arms Regulations that govern its other aircraft.

Insitu believes the aircraft could also sell well with foreign militaries, but is focused first on marketing the drone commercially.

It can carry 20lb and three payloads simultaneously, which enables it to collect and analyze more data in a single flight. It has a 170W onboard power capacity for onboard sensors.



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It has a 13.1ft wingspan and a gross take-off weight of 36.3kg. Flight endurance is up to 18h, operating at a ceiling of 20,000ft. The aircraft's internal combustion engine runs on JP-5 or JP-8 heavy fuel.

Other features include adjustable wings, which can be moved to alter the aircraft's centre of gravity to help balance it when payloads are swapped in and out in the field.

The UAV is designed to survey industrial properties such as oil, gas and mining facilities, as well as inspect disaster areas for the insurance industry. Insitu plans to use the aircraft in its commercial services by the end of this year and sell the aircraft by the second quarter of 2019. https://www.flightglobal.com/news/articles/insitu-launches-scaneagle3-without-itar-restrictions-448275/

## Parachutes For Drones: People Protectors PAUL BERTORELLI

While drones are increasingly used near crowds, the FAA still prohibits their flight directly over people. As a means of gaining FAA approval to fly drones over crowds, a company called Indemnis has developed a fast-deploying ballistic parachute that's designed to resist entanglement if the aircraft is tumbling or spinning, thus making crowd flights safer.

In this podcast recorded at AUVSI XPONENTIAL in Denver, Indemnis CEO Amber McDonald said the company's parachute system anticipates FAA requirements for recovery systems that will make flying over crowds acceptably safe.

The Nexus parachute system deploys a round canopy within 30 milliseconds of a deployment command using compressed air in current models but a pyrotechnic in future iterations. The canopy is shot through a stiff fabric tube that extends clear of the drone's rotors, thus allowing inflation outside the drone's roll radius, thus eliminating or at least reducing the probability of entanglement. The Indemnis system attaches to the drone as a small tube pointed downward. It has its own controller and can be deployed manually or automatically if the aircraft exceeds normal flight parameters.. Indemnis hopes to offer the system by the end of 2018. https://www.avweb.com/eletter/archives/101/4039-full.html?ET=avweb:e4039:2565185a:&st=email#230763



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## AeroVironment partners with FlightWave to add VTOL to future UAVs 03 MAY 2018 FLIGHTGLOBAL.COM GARRETT REIM DENVER

AeroVironment has signed an agreement with FlightWave to add vertical take-off and landing (VTOL) capabilities to its future unmanned aircraft, the company announced on 1 May. The company only recently began manufacturing drones with VTOL capabilities.

FlightWave's VTOL technology comes from its Edge product – a hybrid tri-copter fixed-wing UAV, which transitions to forward flight by tilting its two forward rotors and disengaging its aft propeller. The company's technology will allow AeroVironment's future UAVs to be stripped down and flown as purely VTOL aircraft as well, says Edmund Cronin, FlightWave's chief marketing officer. The wings can be removed and replaced for close-up or under-bridge missions.
https://www.flightglobal.com/news/articles/aerovironment-partners-with-flightwave-to-add-vtol-t-448277/

## BAE becomes partner in Prismatic's UAV programme 03 MAY 2018 FLIGHTGLOBAL.COM MICHAEL GUBISCH LONDON

BAE Systems will invest in UK technology firm Prismatic's development of a solar-powered high-altitude, long-endurance (HALE) unmanned air vehicle.

Prismatic has been working since 2016 on the 115ft-wingspan UAV – dubbed PHASA-35, which stands for persistent high-altitude solar aircraft – and last year flight tested a quarter-scale model of the design.

Engineers predict that the UAV will be able to operate at altitude as a pseudo-satellite for up to a year before requiring maintenance. It is designed to provide surveillance and communications functions. The aircraft will weigh 330lb and have two electrically driven propellers that will be powered by solar panels during the day and by batteries at night.

Prismatic says such UAVs represent a "significantly cheaper alternative to conventional satellite technology". Airbus and Facebook are pursuing similar HALE projects with their respective Zephyr and Aquila programmes. https://www.flightglobal.com/news/articles/bae-becomes-partner-in-prismatics-uav-programme-448299/



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**Textron unveils thrust-vectoring X5-55 VTOL drone** 03 MAY 2018 FLIGHTGLOBAL.COM
GARRETT REIM DENVER

Textron Systems unveiled its X5-55 vertical take-off and landing engineering testbed at the AUVSI Xponential show in Denver on 1 May. The company developed the aircraft to meet demands from military customers for an unmanned air vehicle that is able to take off and land vertically from tight spots, while retaining the ability to fly efficiently over long distances.

The aircraft uses four independently moving electric-powered rotors for vertical and horizontal flight.

"There are multiple ways to get out of a confined space, but with separate lift and thrust system, you have a bigger footprint to transition to fixed-wing flight," says Baity.

The experimental aircraft was first flown in July 2017 and has a gross take-off weight of 75lbs. It can carry a payload of almost 2.3kg and has an electrical power capacity of 50W. Its range depends on the payload, but is around a 100nm.

The X5-55 is built to take full-motion video for intelligence, surveillance and reconnaissance purposes, as well as operate as a communications relay and electronic warfare platform.
https://www.flightglobal.com/news/articles/textron-unveils-thrust-vectoring-x5-55-vtol-drone-448280/

**Unmanned for Good: Xponential 2018 Ends on a High Note** Miriam McNabbon May 03, 2018

Xponential 2018's final day in Denver ends on a high note, focused on an important topic in our industry – drones for good. The highlight of the session was the presentation of humanitarian awards to a group of industry players leading the charge in drones for good. Perry's introduction included the DJI report on lives saved with drones – more than 65 lives directly reported and attributed to the use of drone technology, although the actual number of lives saved through the assistance of drones is most likely far larger. The winners in the Humanitarian category were:

Aeryon Labs Inc won for their efforts in providing critical aerial intelligence to first responders in Sint Maarten after Hurricane Irma.

DroneSAR UAV won for their Search and Rescue software solution, reducing the time to locate victims and reducing risk for search teams.



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DroneSAR Chile is the first drone-based search and rescue organization in South America.

Nepal Flying Labs won for their amazing work in earthquake-struck Nepal, providing maps of the area to help families locate loved ones and protect their homes.

Zipline International won for their innovative and global-first program delivering blood supplies to remote clinics in Rwanda by drone.

AUVSI donated $5,000 to each one of the winners in order to help them to increase the scale of their operations. https://dronelife.com/2018/05/03/unmanned-for-good-xponential-ends-on-a-high-note/

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## Drones used to disrupt FBI hostage situation

Mary-Ann Russ onTechnology Reporter, BBC News 4 May 2018

A top FBI official told a drone conference in Denver that criminals deliberately flew several small drones to block the rescue team's view of an unfolding situation.

The FBI had set up an elevated observation post to monitor the hostage situation, and suddenly drones appeared, carrying out a series of "high-speed low passes at the agents in the observation post to flush them [out].

Criminal use of drones is rising, and the most popular use for unmanned aerial vehicles is for the smuggling of smartphones and drugs into prisons, according to the National Police Chiefs' Council (NPCC). In 2015, it was reported that criminals were using drones to scope out potential burglary targets in Suffolk, and, in 2017, news site Vice made a video documentary about people who were using heat-seeking drones to steal marijuana from illegal farms hidden in residential properties.

And in the US, drones are increasingly being used by criminal enterprises. Mexican drug cartels have been using drones for at least 10 years to smuggle drugs across the border.
http://www.bbc.com/news/technology-44003860



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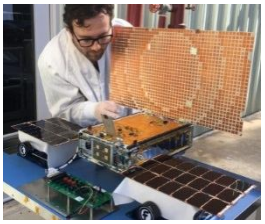
## WALL-E and EVE on their way to Mars with InSight MARCIA DUNN AP Aerospace Writer

May 5, 2018



*Engineer Joel Steinkraus uses sunlight to test the solar arrays on one of the Mars Cube One (MarCO) spacecraft at NASA's Jet Propulsion Laboratory in Pasadena, Calif. The MarCOs will be the first CubeSats - a kind of modular, mini-satellite - flown into deep space. They're designed to fly along behind NASA's InSight lander on its cruise to Mars.*

CAPE CANAVERAL, Fla. (AP) — Named after the characters in the 2008 animated movie, the small satellites WALL-E and EVE hitched a ride on the Atlas V rocket that launched early Saturday from California with the Mars InSight lander.


Similar in size to a briefcase or large cereal box, the satellites popped out from the rocket's upper stage after liftoff and are hightailing it to Mars, right behind InSight.

This is the first time little cube-shaped satellites, CubeSats as they're known, have set sail for deep space. The journey will span 6 1/2 months and 300 million miles.

CubeSats, have been piggybacking on big-ticket space missions for well over a decade, providing relatively cheap and fast access to orbit for students and other out-of-the-mainstream experimenters. Until now, the hundreds of CubeSats have been confined to Earth orbit. That is changing with NASA's Mars Cube One project, or MarCO. The European Space Agency, meanwhile, has its CubeSat sights on the moon: a CubeSat to explore the moon's far side from lunar orbit and another to probe a permanently shadowed crater near the moon's south pole, also from lunar orbit. https://pilotonline.com/news/nation-world/national/article_674fa4fb-2bfd-576d-aaf5-ce2e9ec0cd88.html



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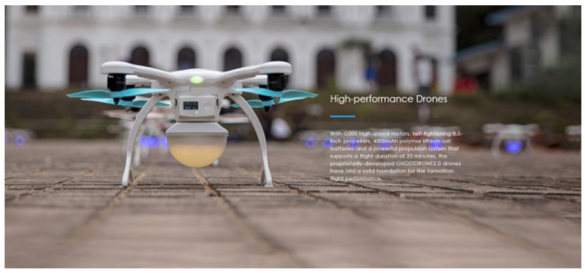
## EHang breaks world record with 1,374 drones, even with some UAVs out of sync! May 5, 2018 Thomas Luna

On Tuesday, May 1, China-based drone company EHang flew 1,374 drones above a 600-year-old city wall called Xi'an and set a new Guinness World Record for the "most number of unmanned aerial vehicles airborne simultaneously. EHang broke Intel's previous record from the 2018 Winter Olympics by 156 drones, but the flight encountered some synchronization problems.

Spanning over 0.6 miles, the drones danced across the sky for 13 minutes and created 16 patterns and other traditional Chinese icons. South China Morning reported that EHang was paid $1.6 million to perform the feat.




EHang used a swarm of their consumer-grade Ghostdrone 2.0 quadcopters, and over 100,000 viewers saw the drones gather in and out of formations. The interference signal from the audience members resulted in a deformation in some of the flight patterns.


Besides breaking formation, some of the drones crash landed towards the end of the show. Beijing News highlighted the errors but also confirmed that the world record was still set. https://www.wetalkuav.com/ehang-breaks-world-record-with-1374-drones-even-with-some-uavs-out-of-sync/

## ODU Team Takes Third Place in International Aircraft Design Competition James Harkins

*ODU's Mechanical and Aerospace Engineering team and the radio-controlled plane they designed.*



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This spring, a team of students from the Old Dominion University Department of Mechanical and Aerospace Engineering, along with department professor Drew Landman, placed third in an international competition featuring 75 universities.

The March competition, hosted by the Society of Automotive Engineers in Lakeland, Fla., challenged students to build a portable aircraft to fit within the confines of a small container. The ODU team designed a radio-controlled plane that could be easily assembled and weighed roughly one pound. Small aircraft like these could serve as a basis for a new generation of aircraft used for rescue, military operations, inspections, construction, or many other purposes.

The aircraft was developed as a senior project by 12 students, who each contributed in unique ways to the project. They described the creative process as a lot of trial and error, with each test providing new insights on how they could improve the design. At one point, the wings of the plane were ripped off by 20-mile-per-hour winds, to which the team responded by reinforcing the spar to make it stronger.
http://www.odu.edu/news/2018/5/aircraft_design?utm_source=homepage&utm_medium=interactive&utm_campaign=HP-Slider#.WvBgC6Qvx0w

## LeveTop is a Compact Folding Drone with a Big Battery, 1080p Stabilized Camera

NEWS Jed John

Levetop Technology has unveiled its latest product, an autonomous folding drone with a compact size. The drone packs an advanced GPS system and a built-in stabilized 1080p camera.

The rotors can be folded inward when not in use. The drone also has the capability to track and follow its user with its precise vision positioning system and also has an auto follow feature. It is capable of 20 minutes of flight time and a top speed of 33 mph. The flight range is also increased to 200m. The battery is a removable cell which would make it easy to use a spare if it runs down. The drone also comes with Motion Control Technology and a 5.8GHz Wi-Fi module.

Its camera packs a CMOS technology which aids in the capture of clear photos and videos. There is also a new positioning technology which allows a novice to take off and land the drone with just a click of the button.



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It is available on Indiegogo for $179 plus shipping. Here's the Indiegogo page.
https://www.gizmochina.com/2018/05/04/levetop-is-a-compact-folding-drone-with-a-big-battery-1080p-stabilized-camera-more/

## Taking Visual Journalism Into the Sky With Drones THE NEW YORK TIMES MAY 2, 2018

*Josh Haner, a New York Times photographer, with his DJI Phantom drone at the Li River in China in 2016*

I'm constantly experimenting with the latest drones and 360/virtual reality camera systems. Every year, drones get smaller, and their cameras get more advanced. In addition to improvements in image quality, I'm particularly interested in using drones for actual reporting — from counting houses that were damaged in a fire, to tracking plant health over time, to help identify the impact of drought, to analyzing migration patterns and to identifying where peat fires burn underground.

We continue to improve on a piece of technology that I first developed in 2010 called our "remote streaming backpack." It enables our photographers to send in their pictures in real time over multiple cellular modems without having to stop, open up a laptop, edit and send. This allows us to publish photos within seconds of when they were taken.

The next improvement will be adapting it to operate on the 5G cellular networks being built in the United States. Faster mobile bandwidth will allow us to get richer content from our journalists faster and will hopefully allow us to deploy this technology more widely for breaking news events.
https://www.nytimes.com/2018/05/02/technology/personaltech/visual-journalism-drones.html

## Global UAV sense-and-avoid market will reach USD3.6 billion by 2022 – New BIS report May 1, 2018 Philip Butterworth-Hayes UTM and C-UAS market analysis

The global UAV sense and avoid system market is anticipated to reach $3,654.3 million by 2022, according to a new market study published



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by BIS Research. https://bisresearch.com/industry-report/global-uav-sense-avoid-systems-market-2021.html) .

Increasing technological advancements to build fully autonomous drones and demand of sense-and-avoid technologies for swarm drones are expected to open several future opportunities for the growth of the market. Sense and avoid systems use a combination of cameras, radar, LiDAR and other components to detect and successfully avoid the obstacles. Commercial applications include inspection, delivery, first responder, and aerial imaging, among others.

"Some of the key players in the UAV sense and avoid system market include: Aerialtronics, BAE Systems, Echodyne Corp., General Atomics Aeronautical Systems, Inc., Harris Corporation, Honeywell International Inc., IMSAR LLC, Intel Corporation, Leonardo-Finmeccanica Spa, Panoptes Systems Corporation, Precision Hawk, Safran Electronics & Defense, Sagetech Corporation, Thales Group, and uAvionix." http://www.unmannedairspace.info/utm-and-c-uas-market-analysis/global-uav-sense-avoid-market-will-reach-usd3-6-billion-2022-new-bis-report/

## AIRBUS COMBINES SATELLITES, PLANES, AND DRONES FOR A NEW VIEW OF THE WORLD JACK STEWART TRANSPORTATION 05.03.18

*Airbus Aerial has work at Atlanta's Hartsfield-Jackson Airport, surveying runways to so humans don't have to drive up and down, to make sure planes are safe from stray debris.*

A year-old effort called Airbus Aerial will seek to serve climate modelers, farmers, city planners, engineers, first responders, and anybody else who needs a particular view of the world. The company combines data from observation satellites, manned planes with cameras slung underneath, and drones, to get to the places others can't reach. Airbus Aerial packages it all up, and presents it neatly to the customer, via a cloud-based interface.

Say a utility company wants to take a closer look at remote power lines. Airbus aerial could start off pulling data from its two constellations of satellites, Spot and Pleiades. To include a closer look, it might contract with a local company to run a plane or drone flight over the area. Imagery in hand, it would mesh the macro and the micro, then send it off to the company.

Airbus Aerial has also just started mapping the runways at Atlanta's Hartsfield-Jackson, the world's busiest airport. Airport officials had asked the company to survey the south runway, to see if drones could cut down on the time-consuming work of driving up and down the tarmac,

checking for debris that could damage any aircraft, inspecting lighting, and checking signage. https://www.wired.com/story/airbus-aerial-drones/

**Police drone spots 15,000 cannabis plants growing on Italian tomato farm** The Local news@thelocal.it @thelocalitaly 2 May 2018

Police in southern Italy discovered a greenhouse filled with more than 15,000 cannabis plants when they flew a drone above a Sicilian tomato farm, they announced on Wednesday.

The illegal crop represents more than six tonnes of marijuana and several million euros, according to the drugs squad in Ragusa, south-east Sicily.

The contents of the 3,500-metre-squared greenhouse were concealed at ground level by a border of tomato plants and fava beans, both of which can grow to several metres in height.

It was only when police, tipped off by reports of a strong smell of marijuana coming from the field, flew a drone overhead that they spotted the cannabis patch, comprised of thousands of plants between 50 and 150 centimetres tall. https://www.thelocal.it/20180502/italy-police-drone-15000-cannabis-plants-tomato-farm

**Drone Makers Work With FAA on Miles-Long Beyond Line of Sight Flights** Wayne Rash May 07, 2018

Commercial drone maker PrecisionHawk worked with the Federal Aviation Administration and Mitre Corp. to produce the Pathfinder Report that outlines how drones can be used safely at long distances for commercial use.

The recent progress is the result of the FAA's Pathfinder initiative, which involved industry partners working with the agency to develop guidelines and best practices for operating drones in ways that were previously prohibited, such as over crowds of people and beyond visual line of sight. The partners and the FAA have put together a report that makes a safety case for operations at distances of as much as 50 miles from the operator of the drone.

Detecting most aircraft is fairly straightforward. An aircraft avoidance system called Automatic Dependent Surveillance—Broadcast (ADS-B) allows an aircraft to know the location of other aircraft with the same system. But there are thousands of aircraft, especially general aviation and private aircraft that aren't outfitted with the avoidance technology. To detect those



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aircraft, PrecisionHawk researchers located remote sensing company SARA (Scientific Applications & Research Associates) that had a technology capable of using sound to locate an aircraft up to ten miles away. The drones also use access to a real-time database of aircraft locations provided by Harris Corporation.

The Pathfinder Report was released on May 1, so there aren't any drone operators that have received the required FAA waivers to begin long-distance commercial drone operations. However PrecisionHawk is already operating in what's called extended line-of-sight modes that allow the drone to travel up to four miles beyond the operator's position.
http://www.eweek.com/mobile/drone-makers-work-with-faa-on-miles-long-beyond-line-of-sight-flights

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## DJI, Microsoft Partnership Creates Drone Developer Tools for Windows Betsy Lillian May 7, 2018

DJI and Microsoft announced a strategic partnership to bring artificial intelligence and machine learning capabilities to DJI drones.

Through the new partnership, DJI is releasing a software development kit for Windows. Using applications written for Windows 10 PCs, drone operators can customize DJI aircraft for a variety of industrial uses.

DJI says taking advantage of Azure's AI and machine learning capabilities helps turn vast quantities of aerial imagery and video data into actionable insights for thousands of businesses across the globe.

DJI explains that its new SDK for Windows empowers developers to build native Windows applications that can remotely control DJI drones, including autonomous flight and real-time data streaming. The SDK will also allow the Windows developer community to integrate and control third-party payloads, including multispectral sensors or robotic components, such as custom actuators – in turn, increasing the ways drones can be used in the enterprise.
https://unmanned-aerial.com/dji-microsoft-partnership-creates-drone-developer-tools-for-windows-10?utm_medium=email&utm_source=LNH+05-08-2018&utm_campaign=UAO+Latest+News+Headlines

## Raytheon To Help New York Develop UTM Corridor Nick Zazulia | May 7, 2018

Raytheon

The Northeast UAS Airspace Integration Research Alliance selected Raytheon as a key partner in the development of America's first and



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most advanced unmanned aircraft system-testing airspace corridor in New York. Raytheon's intelligence, information and services business will help plan, design, build and support the state's next-generation ATM system to safely test and manage drones.

The new corridor will extend 50 miles west from Griffiss International Airport, which is one of only seven FAA-approved UAS test sites in America. It will allow companies to test both drones and ATM technologies in real-world settings, generating data that will inform industry and regulators.

Raytheon's contributions to ATM include the low-power radar, a small, one-meter square active electronically scanned array, software-defined radar unit. When numerous LPRs are networked together, the radar units can cover and control the low-altitude flights of smaller craft—a feat not possible with current large radar systems.

A distributed, low-level LPR network could be created with relative ease, mounting the system atop current cell phone towers or tall buildings.

*A single-engine plane lands with the aid of a compact, low-power radar. Photo courtesy of Raytheon*

http://www.aviationtoday.com/2018/05/07/raytheon-key-partner/

## Airbus Helicopters Tests Man-Unmanned Teaming Matthew Beinart May 7, 2018

*Airbus Helicopters' H-145M working in concert with Schiebel's S-100 UAS.*

Airbus Helicopters has successfully completed manned-unmanned teaming(MUM-T) capability tests with its H-145M helicopter and Austrian defense company Schiebel's S-100 unmanned air system (UAS. The tests are the first MUM-T test for European helicopters to demonstrate the highest level of interoperability, LOI 5.
http://www.aviationtoday.com/2018/05/07/airbus-helicopters-tests-man-unmanned-teaming/



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## Virginia Sheriff's Office Reports Another Drone Success Story Betsy Lillian May 7, 2018

*Sheriff David P. Decatur*

The Stafford County Sheriff's Office in Virginia is crediting its drone and K-9 team for tracking down a suspect after he severely assaulted his wife, prevented her from calling 911 and fled the scene on foot.

On April 26 at approximately 9:46 p.m., Deputy Steven Kellam responded to a call regarding a domestic disturbance in the East Street area of southern Stafford. Following the assault, the man left the scene, but the deputies deployed their drone team and K-9 Lobo, along with his handler. The drone observed the subject walking along the railroad tracks northwest of the residence. The drone operator was able to direct the K-9 and handler to the suspect, who was then arrested.

Last September, the Stafford County Sheriff's Office used its drone to successfully track down a suspect who had fled into the woods. Not long before that, they deployed the drone in a successful search-and-rescue operation for a missing high school student. In addition, in June, the sheriff's office credited the drone with tracking down a subject wanted in a manhunt.
https://unmanned-aerial.com/virginia-sheriffs-office-reports-another-drone-success-story?utm_medium=email&utm_source=LNH+05-08-2018&utm_campaign=UAO+Latest+News+Headlines

## Solar Electric UAV to Stay Airborne for Up to One Year 04 May 2018 Mike Rees

BAE Systems and Prismatic have announced an agreement to develop a new solar electric unmanned aerial vehicle, which has the potential to fly for up to a year before needing maintenance. Engineers from the two companies will collaborate on the development of the new solar powered High Altitude, Long Endurance (HALE) UAV known as PHASA-35, with work already underway to prepare the first aircraft to be ready for flight tests in 2019.

The technology would offer a year-round, low cost persistent service for surveillance and communications to remote areas, using only the sun to power the aircraft during the day and recharge the batteries for overnight operation.



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Solar HALE vehicles offer a significantly cheaper alternative to conventional satellite technology, with PHASA-35 (standing for Persistent High Altitude Solar Aircraft) being a concept solar electric UAV that uses proven, long life battery technology and solar cells to potentially maintain flight for up to 12 months.

The PHASA-35 concept has a 35-metre wingspan and weighs just 150kg. A quarter scale model (named PHASE-8) completed a successful maiden flight in 2017.
http://www.unmannedsystemstechnology.com/2018/05/solar-electric-uav-to-stay-airborne-for-up-to-one-year/?utm_source=Unmanned+Systems+Technology+Newsletter&utm_campaign=6cc35591d8-eBrief_2018_May_8&utm_medium=email&utm_term=0_6fc3c01e8d-6cc35591d8-111778317

## INTELLIGENT ENERGY'S FUEL CELL TECHNOLOGY COULD GREATLY ENHANCE FLIGHT TIMES OF UAS AUVSI NEWS MAY 7, 2018

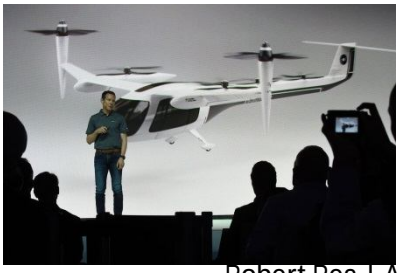
The company says that its lightweight 650W Fuel Cell Power Module "offers considerably longer flight time when compared to traditional batteries." The module runs on hydrogen and ambient air to produce clean power in a "simple, cost effective, robust and lightweight package."

The Jupiter UAS has a flight time of more than two hours thanks to Intelligent Energy's technology. It can also fly for 50 minutes with a lithium-ion battery pack.

According to FlightWave, the Jupiter UAS is the first commercially-available UAS that can be powered by either a battery pack or hydrogen, as the two power systems can be swapped in a matter of seconds thanks to an easy-to-use, tool-free mounting system.
http://www.auvsi.org/industry-news/intelligent-energys-fuel-cell-technology-could-greatly-enhance-flight-times-uas

**9May18**

## Flying Cars Get Uber Boost from Research Pact With NASA Eric Newcomer May 8, 2018



*Jeff Holden, Uber chief product officer, speaks at the second annual Uber Elevate Summit, on May 8, 2018 at the Skirball Center in Los Angeles, California.*



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Uber Technologies Inc. announced a partnership to study urban manned aircraft in conjunction with the U.S. space agency NASA, following a partnership last year that focused on unmanned drones. As part of the deal, Uber will share its data with the National Aeronautics and Space Administration to move the world closer to developing air traffic management systems for a world with flying cars.

While Uber isn't building these vertical takeoff and landing vehicles itself, the company is striking partnerships with manufacturers, battery companies and others who, together with Uber's ride-hailing network, could make it possible to summon a flying taxi via the Uber app.

"Urban air mobility could revolutionize the way people and cargo move in our cities and fundamentally change our lifestyle much like smart phones have," Jaiwon Shin, associate administrator for NASA's Aeronautics Research Mission Directorate, said in a statement.

Uber has set a goal of testing these electric flying vehicles by 2020 and a commercial launch in 2023. https://www.bloomberg.com/news/articles/2018-05-08/uber-to-work-with-nasa-to-study-manned-urban-flying-cars

## Apple, Amazon and More Vie for US Drone Pilot Program REUTERS MAY 8, 2018

The U.S. Transportation Department said it will announce 10 winning state, local or tribal governments to host the experiments on Wednesday. The governments in turn have partnered with companies who will play a role in the tests.

WASHINGTON, D.C. — Major technology and aerospace companies including Amazon.com Inc, Apple Inc, Intel Corp, Qualcomm Inc and Airbus SE are vying to take part in a new slate of drone tests the United States is set to announce on Wednesday.

The pilot program will allow a much larger range of tests than are generally permitted by federal aviation regulators, including flying drones at night, over people and beyond an operator's line of sight. At least 200 companies spanning 149 applications are vying to be part of the program, a U.S. official said. Winners include projects focused on package delivery, environmental monitoring, precision agriculture, pipeline oversight and integrating drones near airports. https://www.businessoffashion.com/articles/news-analysis/apple-amazon-and-more-apply-for-us-drone-pilot-program



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**10May18**

## Sites selected for program aimed at expanding drone flights James MacPherson AP May 9

BISMARCK, N.D. — U.S. Secretary of Transportation Elaine Chao on Wednesday announced 10 sites for a test program aimed at increasing the use of unmanned aircraft for projects that range from monitoring crops and oil pipelines in North Dakota to applying mosquito-killing treatments in Florida and package deliveries in Tennessee.

President Donald Trump signed a directive last year to establish the "innovation zones" that allow exemptions to some drone regulations, such as flying over people, nighttime flights and flights where the aircraft can't be seen by the operator. States, communities and tribes selected to participate would devise their own trial programs in partnership with government and industry drone users.

"Data gathered from these pilot projects will form the basis of a new regulatory framework to safely integrate drones into our national airspace," Chao said in a statement.

Chao, who called the rapidly developing drone industry the biggest development since the jet age, said about 150 applications were received. Selected were the Choctaw Nation of Oklahoma; the cities of San Diego, California, and Reno, Nevada; state transportation departments in North Dakota, North Carolina and Kansas; University of Alaska-Fairbanks; the Center for Innovative Technology in Virginia; Memphis-Shelby County Airport Authority in Memphis, Tennessee; and the Lee County Mosquito Control District in Fort Meyers, Florida.https://www.washingtonpost.com/national/sites-selected-for-program-aimed-at-expanding-drone-flights/2018/05/09/16fa9ae4-53b9-11e8-a6d4-ca1d035642ce_story.html?noredirect=on&utm_term=.4b6621b3c828

## DOD Demands Authority to Destroy Drones in Restricted Airspace Dan Parsons May 9, 2018


Privately owned drones routinely violate restricted airspace over military bases, ships and airfields. The Pentagon wants more authority to shoot them down. The military can disrupt or destroy small UAS over certain secure facilities with restricted airspace but has limited authority



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to shoot down drones over most of its facilities.

The 2017 National Defense Authorization Act (NDAA) gave the Pentagon a green light to make plans for tracking and eliminating threatening UAS flying over facilities with significance to national security, though the methods and which facilities remain classified. Mattis said the current concern is UAS flying over "normal military bases."

"The problem is it's only a matter of time before the threat manifests in a violent way," he said. "We are going to have to come in with a very clear statement of what we need from Congress or the FAA and then get that authority out, get the systems out to take them down."
http://www.aviationtoday.com/2018/05/09/dod-demands-authority-destroy-drones-restricted-airspace/



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