



UAS and SmallSat Weekly News

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Australian university builds drone which uses Xbox Kinect sensor to “see” February 8, 2019 Feilidh Dwyer



Researchers at the University of New South Wales have constructed an autonomous drone that is able to fly intelligently, even when **no GPS** signal is available. Phys.org reports that Dr. Jiefei Wang, a lead researcher on the project, affixed an Xbox Kinect sensor to his drone as an input device.

Dr. Wang also worked on an algorithm that helps the drone process information captured through the sensor, image by image. The algorithm detects the pixels in the current image and compares it with previous images, noting the difference. By sensing the differences in 2-d images, the drone can calculate speed and location in space.

In war or disaster zones, underground or in a collapsed building there may simply be no GPS signal available. Dr. Wang admits that there are some limitations to his invention:

“As the RGB-D cameras (such as the Kinect sensor) are still in their infancy, they still suffer from performance drawbacks such as limited operational range and relatively low resolution,” he said. “In future, we may be able to use the drones to help rescue people from earthquakes, help mining industries with underground detection without risking lives. Autonomous drone technology continues to progress in leaps and bounds. <https://www.wetalkuav.com/drone-uses-xbox-kinect-sensor-to-see/>

Gamifying Drone Training: Inside DroneU and Pix4D’s Accident Scene Reconstruction Training Miriam McNabb February 08, 2019



Anyone familiar with drone mapping may understand the long list of complex nuances of acquiring and processing 3D models using aerial photography. Drone mapping may be complex, but accident scene reconstruction using drone mapping adds a new level of intricacy.

With crash scene reconstruction, accuracy must be exact when court decisions weigh on the data. Drone U may have made learning easier by **gamifying** the drone training experience.

While pilots may make drone mapping flights look easy, the processing of data usually accounts for 80% of the time necessary to complete a drone map. In parallel, instruction of processing



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aerial images to create drone maps also accounts for a large majority of the time for training pilots. Typically, most drone training programs focus on the processing of drone images to create drone maps without teaching students the practical strategy to acquire the data needed to process these maps.



Training should be comprehensive in nature. However, when instructing students on technical photogrammetry processing workflows, student retention can wane quickly. That's where Drone U is increasing student retention of information. Recent training had students **compete** through three practical missions that focus on unique aspects of drone mapping acquisition strategy.

<https://dronelife.com/2019/02/08/gamifying-drone-training-inside-droneu-and-pix4ds-accident-scene-reconstruction-training/>

Azur Drones and how they Received the OK for Autonomous Drones in France

Harry McNabb February 07, 2019



Azur Drones has just **announced** they have received the **first** authorization for Autonomous flight in France. DRONELIFE spoke with Stephane Morelli, Azur's Director General.

Congratulations on your recent authorization. Can you tell us how that came about? We're sure it wasn't easy.

"We had very constructive discussions with the DGAC, but the subject of **autonomous** operations was very **new**. It was necessary to define very precisely our concept of operations with our customers, then to obtain the expected requirements from the DGAC and finally to comply with these requirements."

What were the challenges that you encountered during the process that you did not anticipate in advance?



"The biggest unpredicted challenge was to conduct the safety analyses that corresponded precisely to the risks incurred during the operations we had planned. In this, the **SORA** (Specific Operation Risk Assessment) method, which is being validated internationally, has been very useful."

<https://dronelife.com/2019/02/07/dronelife-exclusive-azur-drones-and-how-they-received-the-ok-for-autonomous-drones-in-france/>



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Feds Directed to Use Drones to Fight Wildfires FEBRUARY 5, 2019 AIR, FAA DEE ANN DIVIS



Hours before parts of the federal government were to shutdown, the president signed an executive order to boost wildfire prevention by reducing the amount of fuel — that is brush, dead trees and timber — on public lands. The White House also told the agencies involved to work with the Federal Aviation Administration to “maximize appropriate use of unmanned aerial systems” to help meet their goals.

Specifically, President Trump ordered the Department of the Interior to treat 750,000 acres of the lands under its control and the Department of Agriculture to treat 3.5 million of its acres to reduce the fuel load.

The order envisions drones being used to “accelerate forest management and support firefighting and post-fire rehabilitation in forests, rangelands, and other Federal lands.” Drones can be used to locate hot spots and firebreak breaches and then deliver water to put those out. It is not only **safer** to use drones over active wildfires but unmanned aircraft have the potential to **fly at night**, greatly expanding the window of time for active containment efforts.

<http://insideunmannedsystems.com/feds-directed-to-use-drones-to-fight-wildfires/>

Delair tunes into enterprise market with aerial intelligence platform launch

BUSINESS HEADLINE NEWS INTERNATIONAL NEW SOFTWARE ALEX DOUGLAS FEBRUARY 6, 2019



The firm, which recently confirmed it had **the largest team** of software developers focused on drone data management, is hoping the new solution can introduce new levels of efficiency for UAV workflows.

It has been designed to provide a complete integrated and easy-to-use workflow to manage, analyse and share data, **streamlining the process of aerial surveying**.

Built on a foundation of six years of internal software development efforts and following its acquisition of Airware’s software platform and development team in 2018, Delair claims it offers the most scalable platform.

Delair’s CEO, Michael de Lagarde said: “It has become clear that data and software are the real **end game** in effective commercial drone use by enterprises. These businesses demand not just



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innovative technology but enterprise-ready solutions that offer the scalability, reliability, and security they need, as well as the ability to integrate with other key business processes to help turn aerial data into actionable business insight."

https://www.commercialdroneprofessional.com/breaking-news-delair-tunes-into-enterprise-market-with-aerial-intelligence-platform-launch/?utm_source=Email+Campaign&utm_medium=email&utm_campaign=45819-291609-Commercial+Drone+Professional+DNA+--+2019-02-09

Ecclesiastical Insurance bids to improve risk management for commercial customers with drone tech trial BUSINESS DRONES AT WORK HEADLINE NEWS INSURANCE

UK ALEX DOUGLAS FEBRUARY 5, 2019



The company is hoping drones can provide aerial imagery of otherwise inaccessible parts of buildings, and give it a fresh risk insight and accurate data to support building valuations undertaken by its surveyors.

One of the test sites, a school in the south of England, received a **shock** when the drone revealed a number of footballs, rugby balls and tennis balls sitting on the roof of its new sports hall blocking the gutters.

Commenting on the trials, Mark Matthews, risk management director at Ecclesiastical, said: "Heritage structures present unique access and maintenance challenges. The use of drone technology gives us access to high quality imagery and very accurate data, which would be near impossible to obtain via traditional surveying methods.

https://www.commercialdroneprofessional.com/ecclesiastical-insurance-bids-to-improve-risk-management-for-commercial-customers-with-drone-tech-trial/?utm_source=Email+Campaign&utm_medium=email&utm_campaign=45819-291609-Commercial+Drone+Professional+DNA+--+2019-02-09

11Feb19

Cygnus supply ship departs space station for extended mission February 8, 2019 Stephen Clark



A commercial Cygnus supply ship departed the International Space Station on Friday for an extended mission **to deploy five nanosatellites** and conduct other experiments before re-entering the atmosphere and burning up with more than two tons of trash.

The space station's nearly 58-foot-long robotic arm grappled the



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Cygnus spacecraft and pulled it away from a berthing port on the orbiting outpost's Unity module early Friday, setting up for release of the supply ship at 11:16 a.m. EST under the command of Expedition 58 flight engineer Anne McClain.

The Cygnus spacecraft fired thrusters to depart the vicinity of the station, then was expected to **raise its orbit** to an altitude of around 300 miles for the separation of **four tiny nanosatellites**. The cargo ship will **then lower its orbit** below the station's altitude **to deploy another CubeSat** before conducting a deorbit burn to fall back into the atmosphere for a destructive re-entry over the Pacific Ocean. <https://spaceflightnow.com/2019/02/08/cygnus-ng10-departure/>

Experimental drone program just getting started in Montgomery County and Virginia Jacob Demmitt jacob.demmitt@roanoke.com 381-8621 The Roanoke Times MICHAEL SHROYER



U.S. Sen. Mark Warner (left) watches a drone lower its payload during a package delivery demonstration by Google's sister company Wing at Kentland Farm in Montgomery County in November. James Burgess, CEO of Wing, holds one of the company's drones prior to a demonstration delivery flight in Montgomery County in August. The **first** successful residential drone delivery in the United States delivered ice cream and frozen treats.

The White House-initiated Integration Pilot Program, or IPP, was designed to let a group of hand-selected communities see what they can do with drones under more relaxed regulations. Virginia was selected in May 2018, and Google's sister company, Wing, made its first long-distance drone delivery as part of the program across rural Montgomery County three months later. Since then Dominion Energy and State Farm have begun their own test flights under the IPP.

Some experimental flights have been staged in Montgomery County, including Wing's beverage delivery in November to Sen. Mark Warner. Others have ventured further from Tech's campus, like State Farm's drones used to assess damage from Hurricane Florence.



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The **goal** is to have all three participants up and running with larger commercial drone programs, which would deliver packages to real shoppers, collect data for real insurance claims and search for real downed power lines.

https://www.roanoke.com/news/education/higher_education/virginia_tech/experimental-drone-program-just-getting-started-in-montgomery-county-and/article_353a70a8-46e7-557f-9f42-60d2430def01.html

Folding Vertical Take Off and Landing Small Unmanned Aerial Systems

Solicitation Number: FA8651-2019-001 Air Force Materiel Command AFRL/RWK - Eglin



Technical Focus: Descriptions of innovative, scalable, folding VTOL SUAS technologies from design concepts to existing full prototypes.

Key Technology Attributes of Interest:

- a. Scalable. Ability to modify vehicle's dimensions for specific defense needs.
- b. Runway Independent. Vehicles does not require a runway at launch and recovery.
- c. Compact Carriage. Ability to house vehicle components in a small footprint.
- d. Foldable. Vehicle is able to be folded for storage in a tube or backpack.
- e. Robust. Aircraft system is able to withstand aggressive environmental conditions and tactical maneuvers.
- f. Modular. Vehicle design allows for multiple configurations and rapid refreshment or introduction of new technology.
- g. Mission flexibility. Vehicle is able to operate at high and just above ground level altitudes. Day and night imaging capability.
- h. Autonomous flight modes. Vehicle is able to fly to pre-determined waypoints.
- i. Mesh networked. On board data link capable of mesh network.
- j. Collision avoidance technologies. Vehicles are prevented from colliding into other vehicles and structures.
- k. Air Delivery. Vehicles are capable of air delivery from a manned platform.

RESPONSES ARE DUE NO LATER THAN 12:00 P.M. Noon (Central Time) ON 1 March 2019. Direct all questions concerning this requirement to Yakemi McKinnis @ yakemi.mckinnis.1@us.af.mil. <https://www.fbo.gov/index?s=opportunity&mode=form&tab=core&id=e3f4ca4000d6075e2368ffb76633184f>

Watchkeeper achieves full operational capability

Tim Ripley, London - Jane's Defence

Weekly 07 February 2019



The British Army has declared full operational capability for the Watchkeeper tactical unmanned aerial vehicle.



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The milestone was “achieved on 30 November 2018”, said a senior military source, although the UK Ministry of Defence chose at the time not to announce it.

A British Army spokesperson told *Jane's* on 6 February, “Watchkeeper achieved full operational capability at the end of last year. Since then, 47 Regiment Royal Artillery has had two batteries at readiness to deploy on operations anywhere in the world.” The military source said the regiment has four equipment batteries that “will cycle through training and operational readiness”. <https://www.janes.com/article/86227/watchkeeper-achieves-full-operational-capability>

Germany's Emqopter is delivering pizza and industrial parts by drones February 11, 2019 Philip Butterworth-Hayes UAS traffic management news



Wurzburg (Germany)-based drone-technology company Emqopter announced it has made **the first food delivery by drone in Germany**.

The flight route of 600m in Bad Neustadt took the drone only **three minutes** of total flight time. Of course, **the pizza was still hot!** With a maximum lift-off weight of 11 kg and a payload of 2kg the drone is perfect for transport of small parts.

The company has also set up an industrial drone delivery network between different plants for an automotive manufacturer. “This is a system we developed for a customer with two separate plants, about 700 meters apart with streets, buildings and other things in between. They were using a car to transport small items from one site to the other, which took 15 minutes. With our system, the same delivery takes five minutes, and they say this **saves 20 percent** in costs.” https://www.gopter.de/en/newspage.php?titel=Lieferdrohne_Abschluss
<https://www.unmannedairspace.info/uncategorized/germanys-emqopter-delivering-pizza-industrial-parts-deliveries-drones/>

US DoD seeks directed energy C-UAS industry partners February 9, 2019 Philip Butterworth-Hayes Counter UAS systems tenders



The Office of Strategic Development Planning and Experimentation (SDPE), Air Force Materiel Command, Wright Patterson Air Force Base, is conducting an experiment to assess the utility of directed energy technology to counter unmanned aircraft systems.

SDPE is conducting this project to assess if directed energy systems are currently available to meet these needs by inviting interested companies to submit capability statements and

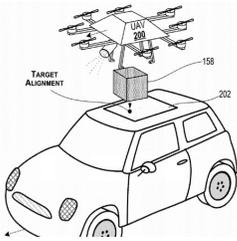


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selecting 4 to 6 respondents to present their systems during an October 2019 Experimentation Event at U.S. Army Base, Fort Sill, Oklahoma, in support of the Maneuver and Fires Integration Experiment 20. During this event, respondents will integrate their prototype system with the Counter Rocket Artillery Mortar Command and Control Battle Management System. This event will last approximately 4 weeks.

https://www.fbo.gov/index?s=opportunity&mode=form&id=74495889b8259675d703d9ead823c54b&tab=core&_cview=0 Solicitation Number: FA8650-19-S-9324 Deadline for responses: **22 February, 2019** <https://www.unmannedairspace.info/counter-uas-systems-tenders/us-dod-seeks-directed-energy-c-uas-industry-partners/>

Microsoft secures patent for UAV ‘en route’ product delivery system BUSINESS HEADLINE NEWS INDUSTRY LEADER REGULATION ALEX DOUGLAS FEBRUARY 11, 2019



The document released as part of the patent states how the UAV would be dispatched along a flight path that intercepts with a predetermined route that the receiving vehicle is expected to travel along.

Once the UAV is in the vicinity of the receiving vehicle, the UAV would approach the vehicle and use cargo releasing equipment to transfer the product. A drone could fly above a car or van at the same speed and would drop the product into an opening in the roof. Alternatively, it describes how it could fly alongside the vehicle allowing a person inside to reach out and retrieve the package.

The patent was filed for in 2017, meaning **it remains to be seen** if the technology is something the tech giant wants to truly pursue https://www.commercialdroneprofessional.com/microsoft-secures-patent-for-uav-en-route-product-delivery-system/?utm_source=Email+Campaign&utm_medium=email&utm_campaign=45819-291703-Commercial+Drone+Professional+DNA++2019-02-11.

DJI’s Origin Story, the New World Headquarters by Apple Park’s Designers, and the Effects of the US and China Trade War Miriam McNabb February 11, 2019



Drone giant [DJI](#)’s origin story – their journey from a dorm room dream to the world’s biggest drone company – was [featured last week](#) in the South China Morning Post. DJI, the article reports, generated **\$2.7 billion in 2017**.

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The company is often called **the Apple of the drone industry** for several reasons: one of them being the sleek showrooms and centers that echo the design ethos of Apple salesrooms. In 4 years, there will be another reason. That's when DJI's **new world headquarters in** the drone manufacturing center of **Shenzhen, China** will be complete. The headquarters for DJI's **14,000 employees** – spread currently across 17 international offices – is being designed by British architectural firm Foster and Partners, the same firm that designed Apple Park in Cupertino, California.

The original article is worth a read, providing stories that the private CEO Frank Wang rarely releases. "In 2005, Wang built a helicopter flight-control system for his graduation thesis, but it failed the night before the class presentation, according to an account in the Chinese-language book *DJI Drone*," says the article. "Wang's efforts, however, eventually paid off, and he built flight controllers out of his dorm room until 2006, when he moved to Shenzhen with two classmates to establish DJI, with encouragement from his university professor Li Zexiang."

DJI's dominance in the consumer market and their evolving role in the industrial drone market – including partnerships with major U.S. companies – will protect the company if trade disputes continue to worsen. "Meanwhile, the company will continue to "focus on improving its products, service and technology", he said, adding that the company can achieve fast turnaround because **it does everything in-house.**" <https://dronelife.com/2019/02/11/djis-origin-story-the-new-world-headquarters-by-apple-parks-designers-and-the-effects-of-the-us-china-trade-war/>

Verity Studios And TikTok Fly 88 Costumed Drones To The 2019 CCTV New Year's Gala

February 8, 2019 News



Verity Studios AG, the global leader in indoor drone systems, and Keey Media, a leading smart entertainment company in China, announced today that 88 Verity Studios drones were chosen to feature in the CCTV New Year's Gala.

The CCTV (China Central Television) New Year's Gala is **the world's most-watched TV program**. This event was broadcast live to an estimated 1 billion viewers across the globe. With 88 Lucie® micro drones flying over performers in red Chinese lantern costumes, this is **the largest number of costumed drones ever seen in a performance**.

Sponsored by TikTok, a leading social media platform in Asia, the show opens to "The Distance of Time", sung by popular singer Sun Nan and up-and-coming pop star Jason Zhang. As the



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song builds, 88 Lucie micro drones fly from the back of the stage like butterflies to dance above the 50 performers dressed as blossoming cherry trees.

"This stunning performance proves how compelling drones can be. More than just flying lights, we've shown that **costumes can transform this technology** into moving sculptures. This is the **first** large-scale performance ever done with drone costumes," said Raffaello D'Andrea, founder of Verity and co-founder of Amazon Robotics. <https://uasweekly.com/2019/02/08/verity-studios-and-tiktok-fly-88-costumed-drones-to-the-2019-cctv-new-years-gala/>

Is it a shark? Is it a dolphin? Drones can help us find out February 12, 2019 Feilidh Dwyer



Researchers from Southern Cross University in Australia have spent the last **three years** using drones to study just how frequent public encounters with sharks are.

To conduct their study, the team spent two years flying regularly drone patrol over beaches in New South Wales. They then reviewed the extensive footage they captured and counted the number of sharks and dolphins they saw.

Over the extended period of observation, the researchers noted **4100 encounters** with large marine animals. Lead researcher of the study, Professor Brendan Kelaher said: "Our beaches provide habitat for amazing marine animals including dolphins, sharks, rays, turtles, seabirds, game fish and the occasional whale." The team's study concluded that it was **135 times more likely for a person to encounter a dolphin than a shark** on the New South Wales beaches they observed.

"The findings confirm that emerging drone technology can make a valuable contribution to the ecological information required to ensure the long-term sustainability of beach ecosystems." <https://www.wetalkuav.com/shark-or-dolphin-australia-drone/>

Measure aims to regulate drone use over private property AP 11 February 2019



In this May 11, 2016, photo, Pontotoc County Sheriff John Christian launches an unmanned aerial vehicle in northern Byng, Okla.

OKLAHOMA CITY (AP) — Oklahoma lawmakers are discussing proposed legislation that aims to ban the flying of unmanned aircraft — or drones



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— over private property in rural areas.

State Sen. Casey Murdock, who sponsored the measure, said it would govern drones flying at 400 feet or lower, and that the measure would not protect Oklahomans living in municipalities. Operators who violate the measure would face up to a year in prison.

“For me right now, this is a private property rights issues and a privacy issue,” Murdock said. “What I’m doing is just giving the local law enforcement the ability to basically write a speeding ticket for someone that’s not flying a drone within the FAA regulations.”

Exceptions are provided for drone pilots employed by the state or federal government, law enforcement, utility, oil and gas companies or who are part of a commercial operation authorized by the Federal Aviation Administration. A private landowner may also give a drone operator written approval. The chances of the bill becoming law are unclear.

<https://apnews.com/fcb79e60cdd447feb5e407d95ebcc13d>

Developing the way for a Coast Guard space program Diana Sherbs, February 8, 2019

Written by Lt. Cmdr. Grant Wyman



The satellite communications ground station sits on the roof of Smith Hall at the U.S. Coast Guard Academy in New London, Conn. The main feature inside the radome is a 3-meter dish antenna and communications components. It is helping to launch the Coast Guard into **an era of space operations**.

The ground station was built by the [Coast Guard Research and Development Center](#) to support the [Department of Homeland Security Science and Technology Polar Scout project](#) which successfully [launched two CubeSats in December 2018](#), and will soon support a broad range of educational opportunities for cadets.

The Academy ground station is part of the **Mobile CubeSat Command and Control network** that



includes sites in Dayton, Ohio; Monterey, California; and Logan, Utah, for frequent contact opportunities with two Polar Scout CubeSats, named Kodiak and Yukon in Low Earth Polar Orbit. The most visible element is the 18-foot diameter fiberglass radome on the roof of Smith Hall. It houses a 3-meter dish antenna controllable in azimuth and elevation so it can automatically point towards the satellite during a pass. The radome also houses the



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communications components such as software-defined radio, amplifiers and filters.

<http://coastguard.dodlive.mil/2019/02/developing-the-way-for-a-coast-guard-space-program/>

13Feb19

Dubai DCAA's Drone Registry Nears 5,000 Mark Peter Shaw-Smith February 12, 2019

Dubai's Civil Aviation Authority (DCAA) claims to be **the global leader** in unmanned aerial vehicle oversight, as its registry of commercial, government and hobbyist drone users approaches the 5,000 mark, DCAA head of airspace safety Michael Rudolph said late last week at the Middle East Aviation Conference in Dubai.

"We have come a long way in a very short period of time. We came up with a protocol...to register every single drone operator in the Emirate of Dubai. To date, since roll-out in early 2017, we have now registered almost 5,000 [drone users]; we are looking at 4,760 operators."

The DCAA's remotely piloted aircraft system (RPAS) registration service costs \$142 for commercial and government users and \$33 for professionals, hobbyists, and freelancers. "This service is mandatory (for) all companies and individuals who wish to conduct activities using RPAS." Tourists attempting to bring drones into the country are requested to register at airports with customs.

On international coordination, DCAA has met with the U.S. Department of Homeland Security and the FAA. "We have had meetings with homeland affairs, with the FAA, and they were absolutely astounded at what we are doing, not because of what we have, but because we were doing it on a mobile network," he told **AIN**.

Tracking devices are mandatory on commercial and government drones, while individual owners' UAVs are monitored using satellite-based mobile telemetry. The Emirate of Dubai's boundaries constitute a limited geographical area of around 4,100 sq km (1,590 sq m), making oversight easier to manage than in the UK or U.S. <https://www.ainonline.com/aviation-news/business-aviation/2019-02-12/dubai-dcaas-drone-registry-nears-5000-mark>

Army Secures Patent for Net Grenades to Disable Drones Darwin McDaniel February 12, 2019 News, Technology



The U.S. Army patented a net-carrying grenade-sized weapon that the service built to catch and deter unmanned aerial systems, C4ISRnet [reported Monday](#).

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The grenade works in a standard 40mm launcher and features sensors that detect the target before launching the net onto the drones. Initial testing of the tool showed it can effectively engage and stop a UAS threat, according to the [patent](#).

“The performance of this invention **goes further than any previous system** proposed which merely launches a net directly at a UAS,” the document states. The patent also indicates the net used in the grenade could also counter boats, boat propellers, moving land vehicles and stationary land vehicles <https://www.executivegov.com/2019/02/army-secures-patent-for-net-grenades-to-disable-drones/>

Frankfurt Airport Working on Flying Taxis The Associated Press Feb. 12, 2019

FRANKFURT, Germany — The operator of Frankfurt's international airport says it is developing a **concept** for electric air taxi services. Fraport AG is working with Volocopter GmbH which makes two-seat, multi-rotor electric aircraft that can fly with a pilot or autonomously.

Actually operating such taxis to bring people to and from the airport will have to wait until the legal framework for autonomous flying is established and such aircraft can be certified for passenger use. Volocopter says its aircraft, based on drone technology and flight tested in Dubai, are quiet, safe and local emissions-free. The idea ultimately would be to operate pilotless when the legal framework is in place.

The European Aviation Safety Agency says **it is developing standards** to enable certification of such aircraft. <https://www.nytimes.com/aponline/2019/02/12/world/europe/ap-eu-germany-air-taxis.html>

U.S. agency requires drones to list ID number on exterior David Shepardson

WASHINGTON (Reuters) - The Federal Aviation Administration said on Tuesday it is requiring small drones to display registration numbers on the exterior to address concerns raised by U.S. security officials and to make it easier to identify owners.

The agency said the move is at the request of law enforcement and the FAA's interagency security partners “regarding the risk a concealed explosive device poses to first responders who must open a compartment to find the small unmanned aircraft's registration number.”

The new rules take effect on Feb. 23. The agency said if it did not **act quickly** that “first responders could be exposed to additional risk during the notice and comment period as a result of the attention drawn to the vulnerability.” <https://www.reuters.com/article/us-usa-drones-idUSKCN1Q1209>



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Forget police helicopters, California cops are using drones to spot suspects *Luke Dormehl February 12, 2019*



In a pilot study carried out by California's Chula Vista Police Department and drone cloud platform [Cape](#), police drones contributed to **20 arrests over a three-month period**. Starting in October, drones were used as part of a program called Drone as a First Response. This program dispatched drones on more than **282 flights**, during which the UAVs racked up some **62 hours of total flight time**.

"After being launched from the roof of the CVPD headquarters to the scene, the designated pilot in the command center can control and manipulate the drone to gain the visibility needed," said Chris Rittler, CEO of Cape. "With the drone typically arriving on scene well before responding ground units, the command center can better identify and dispatch needed resources to the scene. Responding officers can also view the live stream en-route to the scene on their mobile devices, giving them full visibility of the situation they are walking into."



The drones, equipped with Cape's Aerial Telepresence software, were dispatched to high-priority calls within a one-mile radius of the Chula Vista Police Department headquarters. These incidents included crimes in progress, fires, traffic incidents, and reports of dangerous subjects. In one instance, the drone was used in the arrest of a suspect carrying a deadly weapon.

With the study's success, the drones are currently being used as active responders for upward of **10 hours per day, four days per week**. Over time, the plan is for this number to increase. The CVPD is also expanding its DFR program beyond the one-mile radius.

<https://www.digitaltrends.com/cool-tech/chula-vista-police-department-drones/>

Planck Aero Performs Day and Night Flight Testing From Moving Vehicles at Marine Corps Air Station Miramar *February 13, 2019 Military News*



Planck Aerosystems recently received authorization from Marine Corps Air Station Miramar, Air Traffic Control to test the Shearwater sUAS in controlled airspace and at night.

The aircraft repeatedly performed successful **autonomous** takeoffs and precision landings **onto a moving**, off-road



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ground vehicle with centimeter-level accuracy in complete darkness without the need for GPS or a pilot in the loop. Nighttime operations from moving vehicles represent a major step forward in demonstrating the maturity of Planck's vision-based navigation solution.

"This type of testing is critically important to prove that small UAS can safely be operated in close proximity to a high volume of military air traffic, which will continue to be the case as small UAS become proliferated more widely with operating forces," said Josh Wells, CEO and Co-Founder of Planck Aerosystems and former US Navy Pilot.

<https://uasweekly.com/2019/02/13/planck-aero-performs-day-and-night-flight-testing-from-moving-vehicles-at-marine-corps-air-station-miramar/>

Ordnance Survey developing high altitude platform to map the Earth APPLICATION INNOVATION NEWS TECHNOLOGY ALEX DOUGLAS FEBRUARY 13, 2019



Ordnance Survey and a team of aeronautic engineers are developing an innovative solar powered, High Altitude Pseudo Satellite to change how the planet is mapped.

Named Astigan, the enterprise is aiming to give quicker and better images of the Earth through a platform which will fly at 67,000 ft. It weighs 149kg and has a wingspan of 38m. Designers have ensured it will fly for 90 days at a time without the need for landing, the equivalent of circling the Earth four-and-a-half times.

Brian Jones, Astigan managing director, said: "By the end of 2019, we aim to be completing endurance flight testing, building up to 90 days non-stop."

https://www.commercialdroneprofessional.com/ordnance-survey-developing-high-altitude-platform-to-map-the-earth/?utm_source=Email+Campaign&utm_medium=email&utm_campaign=45819-292014-Commercial+Drone+Professional+DNA+-+2019-02-13

14Feb19

CubeSat deployed from space station to test sample return technology February 13, 2019 Stephen Clark



Students work with the TechEdSat 8 CubeSat before its launch to the International Space Station.

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One of five CubeSats deployed from the International Space Station last month is testing a **steerable drag brake** that could find use in future smallsats to return experiment samples to the ground from low Earth orbit, or on low-cost micro-probes to explore other planets.

NASA's nanosatellite was one of five CubeSats released from a NanoRacks deployer outside the space station Jan. 31, joining other missions probing the ionosphere, conducting communications experiments and providing hands-on experience for engineering students. Designed and developed by scientists, engineers and students at NASA's Ames Research Center and San Jose State University, TechEdSat 8 is the latest in a series of miniature satellites validating technology and techniques for **returning** CubeSats and small sample canisters to Earth **intact**.

An Exo-Brake — a square-shaped sail resembling a parachute that spans nearly 20 inches on a side — popped out of one end of TechEdSat 8 around 60 seconds after ejecting the NanoRacks deployer on the station's Japanese robotic arm. The sail generates drag on the satellite as it speeds around Earth, using the rarefied atmosphere to slow down and drop altitude from the space station's orbit more than 250 miles without needing any propellant.

Tensioning mechanisms on the spacecraft will modulate the Exo-Brake, changing its surface area in an attempt to control how much drag the device generates. Engineers will use the modulating Exo-Brake to try to target where the spacecraft will re-enter the atmosphere. <https://spaceflightnow.com/2019/02/13/cubesat-deployed-from-space-station-to-test-sample-return-technology/>

NASA, FAA Implementing Cloud-Based Drone Traffic Mgmt System Brenda Marie Rivers February 13, 2019 News, Technology



The Federal Aviation Administration and NASA are partnering with industry to create a cloud-based traffic management system that handles drones flying in the national airspace, the Department of Homeland Security [said Tuesday](#). The *Unmanned Aircraft Systems Traffic Management* platform organizes the flight of drones registered with the FAA and enables drone users to coordinate airspace use through a UAS Service Supplier.

The UTM system enables *Low Altitude Authorization Notification Capability* drone operators to receive **real-time authorization** to fly in a controlled airspace. Additionally, the system can handle USS and drone operator coordination via mobile and other electronic devices connected to the Internet.



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USS and other data providers may leverage automated UTM communication to share information such as weather and terrain data, airspace events and operational plans addressing flight conflicts. DHS' science and technology directorate is developing related systems such as the *Urban Counter-UAS Operational Prototype*, which will be used to detect unauthorized drones in the national airspace. The UTM infrastructure was first conceptualized by NASA and **will be rolled out** in increments in the near future.

<https://www.executivegov.com/2019/02/nasa-faa-implementing-cloud-based-drone-traffic-mgmt-system/>

Embry-Riddle's UAS Program Transformed by New Penguin C Drones Betsy Lillian

February 13, 2019



assessments, and military surveillance.

Embry-Riddle's acquisition of the drones also opened the door for missions controlled from multiple ground-based stations, called **remote-split operations**, as well as flights beyond the operator's visual line of sight. The aircraft have applications for fighting wildfires, border patrol, search and rescue, oil pipeline and utility inspections, environmental

With a 10.8-foot wingspan, the fixed-wing Penguin C aircraft are capable of flying up to **20 hours over a 60-mile range** while carrying electrical, optical and infrared camera sensors.

"Students currently learn to fly small fixed-wing survey platforms, and beginning in 2020, the military-grade Penguin C aircraft," Wiggins says. "The goal is to ensure our graduates have the skills they need to run a successful business or operation using all types of UAS in a safe, responsible manner." https://unmanned-aerial.com/embry-riddles-uas-program-transformed-by-new-penguin-c-drones?utm_medium=email&utm_source=LNH+02-14-2019&utm_campaign=UAO+Latest+News+Headlines

Suntuity AirWorks Launches Drone Dealership for Solar Companies Betsy Lillian

February 13, 2019



[Suntuity AirWorks](#) has launched a new U.S. dealership that enables established solar vendors to add drone inspections for residential and commercial photovoltaic installations. Services include a "solar health checkup," involving specialized drones designed to rapidly diagnose defects **without requiring roof access by a human**.



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"AirWorks dealers equipped with thermographic drones can create new value for customers by protecting their investment through proactive monitoring of PV assets," says Josh Kniefel, vice president of operations at AirWorks.

The AirWorks dealership comes in three tiers, bronze, silver and gold. Dealers can use an on-demand platform, provided as part of a Web portal and a nationwide network of trained and certified drone operators. https://unmanned-aerial.com/suntinuity-airworks-launches-drone-dealership-for-solar-companies?utm_medium=email&utm_source=LNH+02-14-2019&utm_campaign=UAO+Latest+News+Headlines

15Feb19

LIFT Aircraft Unveils Personal Multirotor Aircraft, Experiential Entertainment

Plans February 13, 2019 News

Matt Chasen, founder of uShip, is unveiling a new venture today called [LIFT Aircraft™](#). LIFT has developed an electric, vertical takeoff and landing aircraft and plans to open up LIFT locations where anyone will be able to rent aircraft and experience an entirely new kind of flying – pilot's license not required.

After training in their virtual reality simulators, anyone over the age of 18, and up to 6' 5" tall and 250 lbs, will be able to fly for up to 15 minutes at a time.



The aircraft, named Hexa™, resembles a large drone with 18 sets of propellers, motors and batteries. It has one seat for the pilot and weighs only 432 lbs – which qualifies it as a Powered Ultralight by the FAA so **no pilot's license is required to fly**. The flight computer is keeping the aircraft stabilized, and the pilot merely provides control inputs using a joystick."

Unlike traditional helicopters, Hexa can even fly with up to six of its eighteen motors out, has a ballistic parachute that autonomously deploys in the event of an emergency, has 5 floats to safely land on water, and can be controlled remotely by LIFT trained safety pilots in the event of an emergency. <https://uasweekly.com/2019/02/13/lift-aircraft-unveils-personal-multirotor-aircraft-experiential-entertainment-plans/>



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FAA Proposes to Ease Drone Flight Rules Matthew Greenwood February 14, 2019



The Federal Aeronautics Administration is [proposing](#) new rules that could pave the way for drones to become a more common sight in American airspace. The FAA will post the proposed new rule in the [Federal Register](#) in the near future and will solicit feedback for 60 days after publication.

First, the FAA will release for comment a new rule that would allow drones to **fly overnight and over people without needing waivers**—under certain conditions. For nighttime flying, the operator needs to have received appropriate training and have passed a test, and the drone needs to be equipped with anti-collision lighting. For flying over people, the conditions would depend on the risk to people on the ground.

Second, the FAA will also release for feedback a framework to **reduce the risks of drones** to commercial aircraft, people on the ground or national security. This will pave the way for drones to be better integrated into the commercial and passenger airspace.

Third, the Administration announced the selection of three commercial service providers who will develop technology to **manage drone integration into the airspace**: flight planning, communications, separation and weather services. The three providers were chosen from a list of 10 pilot projects announced last year to test drone operation in a variety of conditions currently prohibited by law. The providers are the Northern Plains Unmanned Aircraft Systems Test Site, the Nevada UAS Test Site and the **Virginia** Tech Mid-Atlantic Aviation Partnership. <https://www.engineering.com/DesignerEdge/DesignerEdgeArticles/ArticleID/18437/FAA-Proposes-to-Ease-Drone-Flight-Rules.aspx>