



UAS and SmallSat Weekly News

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19Oct18

Self-Flying Skydio R1 Device Can Now Be Controlled From Apple Watch INSIDE UNMANNED SYSTEMS OCTOBER 17, 2018



Self-flying Skydio R1 maker Skydio is building on its autonomy capabilities to deliver an entirely new way of controlling this self-flying camera with the introduction of the Apple Watch app, which allows you to completely direct R1 from your wrist.

Users can [watch the Skydio Apple Watch app in action here](#).



The Skydio Apple Watch app features include:

- Select a subject to follow by picking from thumbnails of everyone R1 sees
- Use the Digital Crown to rotate R1
- Change between cinematic Skills
- Stop and return to phone

Founded in 2014 and headquartered in Redwood City, Calif., Skydio is a robotics company backed by IVP, Playground Global, NVIDIA, Accel and Andreessen Horowitz with **\$70 million** in funding. Its first product, R1, is an autonomous drone that flies itself, combining artificial intelligence, computer vision, and advanced robotics into a tool that anyone can pick up and use in minutes. <http://insideunmannedsystems.com/self-flying-skydio-r1-device-can-now-be-controlled-from-apple-watch/>

Input Sought on Aligning US/Canadian Unmanned and Driverless Regulations

OCTOBER 17, 2018 AIR, LAND DEE ANN DIVIS



The United States government is seeking insights into how it can reduce the regulatory load on the unmanned aviation and self-driving vehicle industries by reducing or **eliminating differences** between American and

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Canadian regulatory requirements. The request is part of a larger effort to reduce duplicative rules being coordinated under the auspices of the Regulation Cooperation Council (RCC). Established in 2014, the RCC seeks to trim unnecessary rules to aid trade and streamline activity. It is co-chaired by the Treasury Board of Canada Secretariat and the Office of Information and Regulatory Affairs, which is part of the White House's Office of Management and Budget.

The current request for information, published October 17 in the U.S. Federal Register, seeks input on what sort of international regulatory cooperation might be beneficial across all agencies, not just those presently engaged in such work. OIRA intends to share the suggestions it receives with the appropriate US agencies and possibly with its RCC co-chair "to get a broader perspective on these policy areas, including the potential cost reductions that could result from cooperation." http://insideunmannedsystems.com/input-sought-on-aligning-us-canadian-unmanned-and-driverless-regulations/?utm_source=October+18%2C+2018&utm_campaign=Inside+Unmanned+Systems&utm_medium=email

When Do Things Change for Recreational Operators? The FAA Reauthorization

Timeline Miriam McNabbon October 19, 2018



The FAA Reauthorization Act repealed Section 336, which protected recreational drones from new regulations. An aeronautical knowledge test and new requirements are in store for hobby flyers – but when will these changes be enacted?

Although the repeal of Section 336 is now law, the aeronautical knowledge test won't be administered immediately – and the

details of the changes are still under discussion.

The text of the law states that the Administrator has up to 6 months to *develop* an aeronautical knowledge and safety test "in consultation with manufacturers of unmanned aircraft systems, other industry stakeholders, and community-based organizations." "Community-based organizations" (CBOs) refer to non-profit flight organizations like the AMA who apply for that designation, and it's good news for the hobbyist community that advocacy groups like the [AMA will be involved](#) with the development and the administration of the test.

The test will be administered electronically by the FAA, CBOs, "or a person designated by the Administrator," which leaves it open to expansion.



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We don't know if the FAA has already started to develop a test, or how long implementation of another online testing system will take. The description of the test in the text of the bill is very broad, stating only that the purpose is to demonstrate an understanding of "aeronautical safety knowledge" and knowledge of FAA requirements for unmanned aircraft operation.

<https://dronelife.com/2018/10/19/when-do-things-change-for-recreational-operators-the-faa-reauthorization-timeline/>

Deadline approaches in small unmanned aircraft competition TOM RISEN OCTOBER 19, 2018



Companies have just a few more days to submit bids in the U.S. Army-led competition to be among the small "runway independent" unmanned aerial systems that soldiers would test fly in 2020.

The services want small, light aircraft "that a unit can easily take with them and don't require a lot of support equipment," said Army Lt. Col. Matt Isaacson, the program's operations officer. Plans call for acquiring two samples from three vendors for a total of six unmanned aircraft that would be flown in 2020 in a "buy, try, decide" approach to replacing the Shadows. The Army wants responses by Oct. 29 to the ["Future Tactical Unmanned Aircraft Systems" request for proposals](#) issued on Sept. 28 via the Federal Business Opportunities, or FedBizOpps, website, which sets flexible parameters for weight.

"This is a way to get industry thinking about a paradigm shift" toward unmanned aircraft that are "runway independent," a capability also called point takeoff and landing. The Army is flexible about how those aircraft should fly and land without runways, he said. Options include vertical takeoff and landing or retrieval with nets. <https://aerospaceamerica.aiaa.org/deadline-approaches-in-small-unmanned-aircraft-competition/>

Uber Ambitiously Eyes 2021 for Food-Delivery Drones Launch Greg

Bensinger and Andy Pasztor Oct. 21, 2018



Uber Technologies Inc. envisions taking to the skies with a fleet of food-delivery drones in as little as **three years**, an ambitious timeline for a ride-hailing company that would face numerous technical challenges and regulatory hurdles.

The San Francisco company is seeking an operations executive who can help make delivery drones functional as soon as next year and commercially operational in



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multiple markets by 2021, according to a job posting that appeared on Uber's website. The drone executive will "enable safe, legal, efficient and scalable flight operations," according to the job listing, which refers to UberExpress, an internal name used for the drone delivery operation within its UberEats prepared-food delivery unit.

Uber is crafting a narrative around its ambitions beyond ride-hailing, as it eyes a [2019 IPO that bankers say could value the company at \\$120 billion](https://www.wsj.com/articles/uber-ambitiously-eyes-2021-for-food-delivery-drones-launch-1540163425). <https://www.wsj.com/articles/uber-ambitiously-eyes-2021-for-food-delivery-drones-launch-1540163425>

PAE ISR Partnering with NASA to Conduct Large-Drone Demo Betsy Lillian October 19, 2018



Sterling, Va.-based PAE ISR LLC, original equipment manufacturer of the Resolute Eagle unmanned aircraft system, has signed a cooperative agreement with NASA to conduct a demonstration of the drone in 2020, as well as work toward integration of UAS into the National Airspace System.

The aircraft has the range and endurance to provide line of sight, beyond visual line of sight, and satellite communications-based BVLOS capabilities, enabling it to support a range of military, law enforcement, homeland security, humanitarian and commercial missions.

The aircraft comes in two configurations – standard and vertical takeoff and landing – with flight endurance of **12 to 18-plus hours**, depending on configuration. It is runway-independent and offers the VTOL configuration for deployment and recovery in challenging conditions, including maritime operations. The aircraft also features a large payload capacity of **75-plus lbs.**, a low acoustic signature at mission altitudes, a small logistical footprint, and significant power on-board for multi-intelligence payload integration.

https://unmanned-aerial.com/pae-isr-partnering-with-nasa-to-conduct-large-drone-demo?utm_medium=email&utm_source=LNH+10-25-2018&utm_campaign=UAO+Latest+News+Headlines

Embry-Riddle researches low-cost drone detection system for small airports

October 19, 2018 Philip Butterworth-Hayes Counter-UAS systems and policies



Embry-Riddle Aeronautical University is developing a drone detection network of passive rooftop sensors that capture electro-optical and infrared data called "drone net", which will be a **cost effective**



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alternative to radar, says the university. The system is aimed at small airports, university and corporate campuses, farms or other operations.

“In the future, if the Drone Net’s all-sky camera and connected acoustic network detect a small unmanned aerial system without a flight plan, or off its flight plan, the technology will kick into gear,” says Embry-Riddle. “Specifically, the all-sky camera will cue an EO/IR camera to slew and track the sUAS with high-resolution visible and infrared imaging until the non-compliant sUAS leaves the area monitored by Drone Net – encompassing about 1 square kilometer.”

“When the all-sky and acoustic system detects something moving,” said Samuel Siewert, an assistant professor of electrical, computer and software engineering, “it activates automatically, sort of like lizard-brain intelligence. It sends a message to begin electro-optical and infrared sensing by tilting and panning the camera to redetect the sUAS in a narrow field of view. The EO/IR sensing is controlled by machine intelligence, so that it will re-detect and track, supporting the identification of drones by ground-based computing systems.”

The goal of the research is to help law enforcement distinguish between responsible drone operators and possibly hostile ones by creating a database of drone “fingerprints.” The researchers, working on Embry-Riddle’s Prescott, Ariz., campus, will compare and validate data captured by the Drone Net with information from many other types of passive and active sensors. <https://www.unmannedairspace.info/counter-uas-systems-and-policies/embry-riddle-researches-low-cost-drone-detection-system-small-airports/>

22Oct18

U.S. Navy Commissions Dedicated UAS Test Squadron [David Donald](#) October 22, 2018



In a ceremony held on October 18, the U.S. Navy commissioned its first test squadron dedicated to unmanned air systems (UAS). Known as Air Test and Evaluation Squadron (UX) 24, the new squadron continues the work of the UAS Test Directorate of the Naval Air Warfare Center Aircraft Division (NAWCAD).

NAWCAD’s new UAS squadron is based at Webster Outlying Field (WOLF), part of the center’s Patuxent River complex in southern Maryland. The squadron operates more than **23 UASs** of various sizes and capabilities, including the Northrop Grumman MQ-8 Fire Scout, Boeing/Insitu



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RQ-21 Blackjack, Aeronautics RQ-26 Aerostar, and the RQ-11 Raven, RQ-12 Wasp and RQ-20 Puma from AeroVironment. A number of commercial UAS types are also employed.

UX-24's task is to provide platforms, operators, maintenance, safety oversight and facilities for RDTE&E (research, development, test, evaluation, and experimentation) activities associated with UASs for both Navy and Marine Corps. <https://www.ainonline.com/aviation-news/defense/2018-10-22/us-navy-commissions-dedicated-uas-test-squadron>

Drone missed Heathrow-bound 787's engine by 10 ft 22 OCTOBER, 2018 FLIGHT DASHBOARD LONDON

UK investigators have disclosed that an unmanned aerial vehicle was flown within 10ft of a Boeing 787 on approach to London Heathrow. The aircraft had been operating at 3,200ft on approach to runway 27L on 25 June, according to the UK Airprox Board.

It says a "drone-like object" **was seen** to pass just below the right wing, avoiding an impact with the starboard engine. The board says the drone was being flown beyond visual line-of-sight limits, at an altitude and in a position which meant it was "endangering other aircraft".

It has not identified the 787 operator involved, although the time of the encounter coincides with the flightpath of a Virgin Atlantic 787-9 service arriving from Delhi.

<https://www.flightglobal.com/news/articles/drone-missed-heathrow-bound-787s-engine-by-10ft-452882/>

SimActive Adds 3D Modeling to UAV Photogrammetry Solution Betsy Lillian October 22, 2018



SimActive Inc., a Montreal, Quebec-based developer of photogrammetry software, has released version 8.0 of its Correlator3D solution.

The new version of the software allows users to generate 3D, textured meshes to create photorealistic models, which can be exported in standard formats. "Adding a 3D modeling function addresses an increasing need in the industry and the natural progression of our software workflow," says Louis Simard, chief technology officer of SimActive. "The module implements a new capability to bolster the same software at no additional cost for our users."



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Correlator3D is a patented photogrammetry solution for the generation of geospatial data from satellite and aerial imagery, including from unmanned aerial vehicles. It performs aerial triangulation and produces dense digital surface models, digital terrain models, point clouds and orthomosaics. https://unmanned-aerial.com/simactive-adds-3d-modeling-to-uav-photogrammetry-solution?utm_medium=email&utm_source=LNH+10-25-2018&utm_campaign=UAO+Latest+News+Headlines

23Oct18

Going Bladeless RENEE KNIGHT OCTOBER 23, 2018 AIR, IUS EXCLUSIVE



systems.

When Texas A&M University-Corpus Christi graduate student Daniel Valdenegro started thinking about his senior design capstone project last year, he knew he wanted to focus on making drones safer to fly. The main goal was to reduce the hazards associated with the exposed propellers found on many unmanned aircraft

The system works much like a Dyson bladeless fan, but is designed to create more thrust. Bladeless fan cross-section geometry, airflow properties, impellers, motors, ducted fans and conventional quadcopter dynamic modeling were all used in the propulsion system's design. Based on their research into bladeless fan design, the team of four developed a nozzle that attaches to an Electric Ducted Fan to create a bladeless thruster prototype.

The nozzle is a circular ring with the cross section of an airfoil that's designed to induce an airflow from its surroundings through the ring. The prototype's four bladeless thrusters all push the forces created by the motor to control the system. The thrusters were 3-D printed and tested with the EDF. http://insideunmannedsystems.com/going-bladeless/?utm_source=October+23%2C+2018&utm_campaign=Inside+Unmanned+Systems&utm_medium=email

Boeing Joins EU UAS Airspace Management Initiative 22 Oct 2018 Mike Rees



[Boeing](#) has announced that it has joined the European Network of U-Space Demonstrators, a Europe-wide platform for aggregating early Unmanned Aircraft Systems airspace management initiatives, launched by Violeta Bulc, European Commissioner for Transport.

By signing the EU Network Manifesto, Boeing deepens its existing partnership with the European Commission, the European Aviation Safety Agency (EASA), the



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SESAR Joint Undertaking (SJU), Eurocontrol and others, and adds a global dimension to the newly established European Network of U-Space Demonstrators.

The Network's objective is to step up future technology and the associated regulatory framework, triggering a spectrum of new and innovative businesses and service opportunities in the UAS marketplace, in particular Beyond Visual Line of Sight and automated operations.

"Boeing has more than a century of experience safely introducing and integrating new technologies and vehicles," said Mildred Troegeler, director, Global Airspace Integration Strategy & Execution. "The EU network of demonstrators will allow regulators and industry to learn from each other and to make the **new frontier of transport** a reality without compromising safety." https://www.unmannedsystemstechnology.com/2018/10/boeing-joins-eu-uas-airspace-management-initiative/?utm_source=Unmanned+Systems+Technology+Newsletter&utm_campaign=2e7ef35ffd-eBrief_2018_Oct_23&utm_medium=email&utm_term=0_6fc3c01e8d-2e7ef35ffd-119747501

Embry-Riddle Study Shows Need for Increased Drone Safety Jason Reagan October 22, 2018



A recent study reveals that a growing number of amateur drone users are creating new dangers with risky flights.

Florida-based Embry-Riddle Aeronautical University released [the study](#) this week estimating that "only 12 percent of all detected drones were flying near unimproved land and parks."

"More than three-fourths were flying in residential neighborhoods or near single-family homes. Another 21.5 percent hovered above commercial, industrial or public properties."

Using a DJI AeroScope radio-frequency drone sensor, researchers monitored drone flights near Daytona Beach International Airport over a 13-day window. After comparing 177 flights and activity with the FAA's UAS Facility Maps, the research showed that "more than one-fifth of were flying higher than the safe altitude prescribed for their operating area."

"These data suggest that more than one in five sUAS flights presented a risk to nearby manned aviation operations," the authors concluded.

"This was an **unexpected finding**," said Assistant Professor of Aeronautical Science Dr. Ryan Wallace, lead author of the study. "We thought most drone operators would choose relatively open areas offering a safety buffer from hazards, but that wasn't the case."

<https://dronelife.com/2018/10/22/embry-riddle-study-shows-need-for-increased-drone-safety/>



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24Oct18

Skip over traffic? Soon this 'personal helicopter' could come to crowded cities

Chris Woodyard, USA TODAY Oct. 24, 2018

The SureFly is a two-seat helicopter that could be the market within a couple of years.



LOS ANGELES – Cincinnati-based Workhorse believes it's on the forefront of electric vertical take-off and landing technology. Working with the Federal Aviation Administration, the company hopes to have its **first model to customers by 2021**.

Japan's government recently [launched a campaign](#) to bring together companies and public agencies in a push to have flying vehicles aloft next decade. In the U.S., ride-hailing service Uber [announced an initiative](#) last year to create flying vehicles.



The SureFly is a two-place hybrid-electric helicopter designed for commuter use.

"eVTOL technology is something we should take seriously," said James Moore, director of the University of Southern California's Transportation Engineering Program. The key to its success is making lighter batteries and developing regulations governing the copters' flight paths. "How quickly we respond to take advantage of the new technology will largely be a question of how quick we can define the **new rules of the road**, so to speak."

<https://www.usatoday.com/story/news/2018/10/23/personal-helicopter-surefly-flying-cars-urban-congestion/1726385002/>

Rocket Lab breaks ground on new Virginia launch pad October 22, 2018 Stephen Clark

Officials from Rocket Lab, NASA, and the Virginia Commercial Space Flight Authority broke ground on a new launch pad at Wallops Island, Virginia, on Oct. 17.



The company's Electron rocket could begin launching **small satellites** into orbit from Wallops Island in the **third quarter of next year**, said Peter Beck,

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Rocket Lab's founder and chief executive. He told Spaceflight Now in an interview that placing Rocket Lab's new launch pad, named Launch Complex-2, near an existing pad at Wallops will allow the company to begin operations there sooner than possible at other locations around the United States.

"Part of the key criteria was being able to push stuff out of the ground very, very quickly, and also have a high flight rate," Beck told Spaceflight Now. "So those were the two prime drivers, and that's where Wallops was able to provide a very nice solution by leveraging some existing infrastructure already (there)."

Nash said the Rocket Lab launch mount will be located near a vinyl-lined extension to pad 0A's water deluge basin, where thousands of gallons of water are dumped during engine test-firings and Antares launches.



File photo of an Antares rocket at pad 0A, with the vinyl-lined extension to the pad's water deluge basin visible in the foreground.

Pad 0A is one of two existing orbital-class launch pads on Wallops Island. <https://spaceflightnow.com/2018/10/22/rocket-lab-breaks-ground-on-new-virginia-launch-pad/>

DJI Refines Geofencing and Ditches AirMap for PrecisionHawk Malek

Murison October 24, 2018



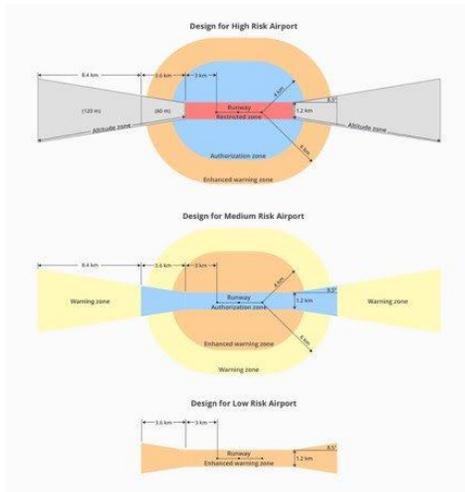
DJI has announced improvements to its geofencing technology. The move will refine airspace limitations for drone flights near airports. The GEO update will be backed by geospatial data from PrecisionHawk, replacing [Airmap](#), the Santa Monica-based company DJI had been working with since 2015.

Instead of simple circles, the new GEO system will create detailed three-dimensional "bow tie" safety zones surrounding runway flight paths, as well as more complex polygon shapes around other sensitive facilities. **This flexibility is required to better reflect the actual safety risks** posed by operating drones in those areas.

It will also open up flights to the side of runways, where risk is substantially lower. DJI has shifted its geofencing feature to accommodate airspace and airport risk. You can see how the Chinese manufacturer applied expertise from general aviation pilots through the Aircraft Owners and Pilots Association and with airports through the American Association of Airport Executives on the chart below.



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GEO 2.0 applies risk-based airspace boundaries to the airspace around airports that can be considered to involve high, medium, and low risk. It also incorporates the elements of the recently-enacted U.S. Federal Aviation Administration Reauthorization Act. For example, the final approach corridor for active runways at major airports are set to be “runway exclusion zones” for unauthorized drones. <https://dronelife.com/2018/10/24/dji-refines-geofencing-and-ditches-airmap-for-precisionhawk/>

New Deseret UAS Facility Opens its Doors in Utah [Betsy Lillian](#) October 24, 2018



Deseret UAS board of directors

[Deseret UAS](#) has opened its Utah headquarters, providing a space for unmanned aircraft system flight simulations, UAS test ranges and collaborative meeting spaces.

Located at the Xperience Center in Tooele City, the facility offers miles of airspace for flying, as well as the amenities of an urbanized area. It is centrally located near Utah’s Wasatch Front and is 30 minutes away from an international airport.

Deseret UAS is a **nonprofit corporation** created jointly by Tooele and Box Elder counties in close partnership with Ogden City. To support the governor’s 25K Jobs Initiative for Utah’s 25 rural counties, their mission is to facilitate rural economic development through the advancement of UAS and to elevate Utah’s presence in the drone industry.

Deseret UAS has hired Tulinda Larsen to lead the organization as its executive director. She is the founder and CEO of Skylark Services, an economic consulting company that researches commercial manned aviation and UAS. She is also an economist and adjunct professor of global aviation economics at Embry-Riddle Aeronautical University. https://unmanned-aerial.com/new-deseret-uas-facility-opens-its-doors-in-utah?utm_medium=email&utm_source=LNH+10-25-2018&utm_campaign=UAO+Latest+News+Headlines



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FlightSafety Enters the UAV Pilot Training Arena Juan Plaza October 23, 2018

Since being founded in 1951, [FlightSafety International](#) has greatly contributed to aviation safety around the world, and they're looking to bring that insight and expertise into the unmanned space with a comprehensive line of [Unmanned Systems Training](#).



They're also a well-respected manufacturer of flight simulators, visual systems and displays to commercial, government and military organizations. The company provides more than 1.4 million hours of training each year to pilots, technicians and other aviation professionals from 167 countries and independent territories

"Earlier this year, FlightSafety expanded its offerings to provide comprehensive Unmanned Systems Training through a series of Remote Pilot ground and flight training courses," Peter told Commercial UAV News while showing off a brochure with the details. "These courses are designed to achieve the highest levels of safety and proficiency in the industry. Through customized course development, we can tailor the program to the customer specific and individual needs of a wide scope of commercial operations."

Since being founded in 1951, FlightSafety has been providing manned pilot education and CRM training. https://www.expouav.com/news/latest/flightsafety-uav-pilot-training/?utm_source=marketo&utm_medium=email&utm_campaign=newsletter&utm_content=newsletter&mkt_tok=eyJpIjojWXpNE5UbGhZekV4WXpRMylsInQiOiJUVkNOVIFHUTgxYkNTOW1BWnM3djRTd2RWZWdvWVG1nYmJJeWhsWktuMmNjcEpUdEM2dTU1OVVwWGdySEZUa1dOcmw2OENvMjFDd0ZVY3Y0eU44T3g3TEEwWjZcl0hab3dYRWxvNDhaT1dveEJURjlrSIiHTkRFOXZRzd3JONFJtTTdVln0%3D

UNL project will send drones into tornadoes to better understand their causes

Nancy Gaarder World-Herald staff writer Oct 24, 2018



Aftermath of the 2014 tornado in Pilger. The town's high school was destroyed.

The University of Nebraska-Lincoln is leading an ambitious new study to use drones to track tornadoes in the Great Plains.

More than 50 scientists and students from four universities will participate in the study, dubbed TORUS for Targeted Observation by Radars and UAS of Supercells. The goal is to get drones close enough to the heart of a tornadic storm so scientists can have a clearer idea of what



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triggers one storm to form a tornado while a similar, second one doesn't, said Adam Houston, associate professor of earth and atmospheric sciences.

The Great Plains is a good laboratory for storm research because its wide open spaces provide good visibility, and the region has a good network of roads. And, despite research indicating a shift in tornadoes to the east, it remains a region of high tornado frequency.

The three-year project is funded through a \$2.4 million National Science Foundation grant and others. The University of Colorado-Boulder, Texas Tech University and the University of Oklahoma, along with the National Severe Storms Laboratory are participating.

The research teams will chase storms across the 367,000 square miles of the Great Plains from North Dakota to Texas. Field work begins May 13.

https://www.mdjonline.com/neighbor_newspapers/extra/news/unl-project-will-send-drones-into-tornadoes-to-better-understand/article_68717032-c8f6-593c-8e11-079121ccc14c.html

Canada opens giant drone testing area October 23, 2018 [Feilidh Dwyer](#)



The city of Calgary in Canada has sectioned off a **50-hectare** site in their industrial district specifically dedicated for drones.

The area is intended for use as a testing site for industrial drone companies as well as an educational space to teach would-be pilots how to operate their drones safely.

Calgary's Mayor Naheed Nenshi says the new testing area will provide a huge economic benefit to the oil, gas, film and financial services industries. "We have a part of the city that is part of the endless prairie where there are no buildings, so the concept of the living lab, here, for the first time in Canada really allows us to help these companies grow," he said.

Companies who wish to use this park will need to meet certain requirements. They will be required to pay licensing fees and prove they have at least \$2 million in corporate liability insurance as well as a special flight operations certificate for drone technology.



As of yet, there are few facilities in the United States with quite the size of this park in Calgary. Here is a map of the main drone testing areas in the continental United States courtesy of the [FAA's website](#).

A common complaint from some WeTalkUAV readers is that they struggle to find enough spots where they can fly their drone legally without pissing off the locals.



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https://www.wetalkuav.com/canada-opens-giant-drone-testing-area/?utm_source=WeTalkUAV&utm_campaign=3dd9db9c3e-RSS_EMAIL_CAMPAIGN&utm_medium=email&utm_term=0_1d410cb84d-3dd9db9c3e-83642867

25Oct18

General Dynamics, Northrop Grumman report sales improvements Marjorie

Censer October 24, 2018

Buoyed by acquisitions, both General Dynamics and Northrop Grumman said they saw sales and profit boosts during their most recent quarter.

Northrop Grumman said today its quarterly sales reached \$8.1 billion, up 23 percent from the same three-month period a year earlier. The contractor **attributed the increase to its acquisition of Orbital ATK, which is now Northrop's innovation systems business.**

<https://insidedefense.com/daily-news/general-dynamics-northrop-grumman-report-sales-improvements>

Kent State Works on Army-Funded Drone Propulsion Research [Betsy Lillian](#) October

24, 2018



A researcher at Ohio's Kent State University has [received](#) an unmanned aircraft systems research grant from the U.S. Army Research Laboratory.

The grant provides \$130,000 for Blake Stringer, Ph.D., assistant professor of aerospace engineering in Kent State's College of Aeronautics and Engineering, to study propulsion systems for **a new generation of**

midsize UAS, the university explains.

In a collaborative effort with Army Research Lab consultants and researchers at the University of Tennessee, Stringer will assess the feasibility of creating a drone that can serve a wide variety of functions for the military.

One of the challenges for designing such aircraft is meeting power requirements.

"How do we efficiently produce power that's not around a gas turbine or a piston engine?"

Stringer says. "Is it going to be some kind of hybrid propulsion system? Will you have a fuel cell that feeds into a battery and uses the battery for surge moments?" [https://unmanned-](https://unmanned-aerial.com/kent-state-works-on-army-funded-drone-propulsion-research?utm_medium=email&utm_source=LNH+10-25-2018&utm_campaign=UAO+Latest+News+Headlines)

[aerial.com/kent-state-works-on-army-funded-drone-propulsion-research?utm_medium=email&utm_source=LNH+10-25-2018&utm_campaign=UAO+Latest+News+Headlines](https://unmanned-aerial.com/kent-state-works-on-army-funded-drone-propulsion-research?utm_medium=email&utm_source=LNH+10-25-2018&utm_campaign=UAO+Latest+News+Headlines)



UAS and SmallSat Weekly News

The Coolest Motorcycle in the World Just Got its Own Drone Miriam

McNabbon: October 25, 2018



In a recent coffee shop, we just had to engage with a couple who arrived on our absolute dream: a gorgeous [Ural](#) motorcycle, complete with gleaming sidecar. Life goals – but that same motorcycle just got cooler. It now comes with a drone.

Ural motorcycles are legendary, being first introduced in the second world war. They are rugged bikes designed to travel from urban to off-road terrain – with a passenger. Manufactured in Russia, the Ural is reportedly based on an original design reverse engineered from a BMW R71.

The Ural Air “reflects our fascination with blending Ural’s classic design with cutting edge technologies,” says the company website. Ural riders taking their bikes to the back of beyond for adventure can now document it – from the air. <https://dronelife.com/2018/10/25/the-coolest-motorcycle-in-the-world-just-got-its-own-drone/>

Stanford's micro-drones can grab and haul heavy loads, open doors ROBOTICS

Paul Ridden October 25th, 2018



Gecko-inspired adhesives allow the FlyCroTug micro-drone to perch on smooth surfaces, but hook-like microspines are used for rough surfaces

Researchers at Stanford University have modified teeny flying robots so that they can squat down and move

objects **40 times their weight.**



UAS and SmallSat Weekly News

The Stanford researchers have named their creation the FlyCroTug, which describes what it's capable of – flying, crouching and tugging. Its small size means that it can fly through small spaces and get fairly close to people which will come in handy for search and rescue situations. The mini-drones can fly to a disaster site, land and temporarily cement themselves to a variety of surfaces. This is made possible thanks to either gecko-inspired adhesives for smooth surfaces or 32 hook-like microspines inspired by insects for rough surfaces, both of which were previously developed at the [Biomimetics and Dexterous Manipulation Lab](#).

"Wasps can fly rapidly to a piece of food, and then if the thing's too heavy to take off with, they drag it along the ground," said the lab's Mark Cutkosky. "So this was sort of the beginning inspiration for the approach we took."

Each FlyCroTug has been fitted with a small winch so that when it lands, it can pull debris up to 40 times their weight out of the way, lower a camera to allow rescue personnel to survey the area or even open doors.

With a closed door as the obstacle, a single FlyCroTug might find keeping the handle down and tugging the door open a tad taxing, so the researchers got two of them to work together.

"People tend to think of drones as machines that fly and observe the world, but flying insects do many other things – such as walking, climbing, grasping, building – and social insects can even cooperate to multiply forces," said Dario Floreano of Switzerland's École Polytechnique Fédérale de Lausanne, who also worked on the project. "With this work, we show that small drones capable of anchoring to the environment and collaborating with fellow drones can perform tasks typically assigned to humanoid robots or much larger machines."

A paper detailing the project has been published in [Science Robotics](#).
<https://newatlas.com/flycrotug-micro-drone-gecko-wasp-stanford/56958/>

26Oct18

Insitu Collaborates With the FAA to Demonstrate Achievement of UAS Type Certification Requirements <https://www.insitu.com/press-releases/Insitu-Collaborates-With-FAA-Demonstrate-Achievement-of-UAS-Type-Cert>



Bingen, Wash., October 23, 2018 – Insitu, a wholly-owned subsidiary of The Boeing Company, has successfully completed the first interim Type Certification Board Meeting in support of the ScanEagle3 Federal Aviation Administration type certification program.



UAS and SmallSat Weekly News

FAA teams including Aircraft Certification, Aircraft Flight Status, Air Traffic Organization and Aircraft Unmanned Systems came together at Insitu's headquarters in Bingen, Washington for the TCBM, a first for the FAA teams. They participated in an overview of Insitu's Project Plan for Certification, examining Insitu's "Detect and Avoid" capability planning, along with its Safety Management System and proprietary model-based engineering. The three-day agenda included launch-to-capture flight tests, as well as standards, flight training and technical publications and manuals reviews to ascertain Insitu's proposed basis for 2019 UAS Type Certification.

Insitu exhibited the ScanEagle3's design and technology milestones that it has reached. The aircraft type certification requires that an aircraft and its subassemblies are manufactured according to the approved design and that the design ensures compliance with appropriate standards. At that point a standard Certificate for a special class vehicle will be issued by the FAA. <https://www.insitu.com/press-releases/Insitu-Collaborates-With-FAA-Demonstrate-Achievement-of-UAS-Type-Cert>