UAS and SmallSat Weekly News

Contents

Robert Rea | Axcel Innovation | Charlottesville and Portsmouth, VA
robert.rea@axcel.us | 757-309-5869 | www.axcelinnovation.com

14Dec19

EHang begins trading on Nasdaq as it releases pricing of long anticipated IPO

APPLICATIO NHEADLINE NEWS INTERNATIONAL UNITED STATES ALEX DOUGLAS DECEMBER 13, 2019

Ehang Holdings has announced the pricing of its initial public offering of 3,200,000 American Depositary Shares. It will represent 6,400,000 Class A ordinary shares at a public offering price of $12.50 per ADS.

The ADSs began trading on the Nasdaq Global Market yesterday, under the symbol “EH”. The offering is expected to close on December 16, subject to customary closing conditions.

Morgan Stanley & Co. LLC, is acting as the sole bookrunner for the offering, and Needham & Company, LLC, Tiger Brokers (NZ) Limited and Prime Number Capital, LLC are acting as co-managers for the offering.

A registration statement relating to the ADSs being sold in this offering was declared effective by the Securities and Exchange Commission on December 11.
https://www.commercialdroneprofessional.com/ehang-begins-trading-on-nasdaq-as-it-releases-pricing-of-long-anticipated-ipo/?utm_source=Email+Campaign&utm_medium=email&utm_campaign=45819-319447-Commercial+Drone+Professional+DNA+-+2019-12-13

FAA approves rare permit to replant after wildfires APPLICATION FAA REGULATION ALEX DOUGLAS DECEMBER 13, 2019

DroneSeed has obtained an additional amendment to its already unprecedented FAA Part 333 exemption that enables them to operate their seed-planting drones BVLOS in forested and post-fire areas. It means the company can operate beyond a pilot’s view – a classification thus far unique to DroneSeed and a first for a company in its industry.

Until now the U.S. Forest Service and Bureau of Land Management lacked an immediate solution to safely, quickly, and effectively replant in those areas, but DroneSeed say this approval gives them capability to overcome that hurdle.

Robert Rea | Axcel Innovation | Charlottesville and Portsmouth, VA
robert.rea@axcel.us | 757-309-5869 | www.axcelinnovation.com

Now, it says, DroneSeed can safely and efficiently replant seed vessels that boost survival rates immediately after a fire, deploying them with greater precision and efficacy by targeting areas called 'microsites' where regrowth has its best odds.
https://www.commercialdroneprofessional.com/faa-approves-rare-permit-to-replant-after-wildfires/?utm_source=Email+Campaign&utm_medium=email&utm_campaign=45819-319447-Commercial+Drone+Professional+DNA+-+2019-12-13

India Begins to Build and Deploy Nationwide Unmanned Traffic Management Architecture Miriam McNabb December 13, 2019

India's government is taking steps to regularize commercial drone use, as it begins to build and deploy a nationwide unmanned traffic management architecture.

India's current drone regulations, Civil Aviation Regulation 1.0, lists very specific software and hardware requirements which most imported drones, including manufacturing leader DJI, do not meet. While some drones manufactured in India do meet the regulations, currently supply does not meet demand. Unofficially, however, estimates indicate more than a half million drones are flying in India: despite the fact that it is illegal to import drones without special approval. While there are rules in place to request exemptions from the regulations, many flights take place without permission.

Despite these challenges, India is widely considered to represent major growth opportunity for the drone industry – and the commercial drone ecosystem is developing rapidly in India. As India's Civil Aviation Authority works to develop further regulations to help the commercial drone industry fly legally, they are also moving forward to develop a nationwide UTM system. After issuing several solicitations over the last year, the country has selected systems integrator Happiest Minds to build India's Digital Sky. Happiest Minds will work with multinational UTM company ANRA Technologies as domain specialists on a 3 phase, 21 month project designed to bring a government provided, free system to market.
https://dronelife.com/2019/12/13/india-begins-to-build-and-deploy-nationwide-unmanned-traffic-management-architecture/

Robert Rea | Axcel Innovation | Charlottesville and Portsmouth, VA
robert.rea@axcel.us | 757-309-5869 | www.axcelinnovation.com

AirVuz Video of the Week: Holiday Lights from Rice Park, St. Paul Harry McNabb December 13, 2019

Everyone loves holiday lights. Here is great example, filmed by 4atie.j11 and posted at our friends at Airvuz.com, the largest collection of drone videos on the web. Rice Park is a public park in downtown Saint Paul, Minnesota, United States. It features a fountain, a bandstand, sculptures of characters from the Peanuts cartoons and an ice-rink during the winter months along with some very cool winter decorations. Shout out to Katie.j11 who has one of the best descriptions that I have come across "*Why do I love AirVuz? Because the world is insanely beautiful and I hope that we can realize that | "Take it all in, the world's a show…" | I fly drones – not as much as I would like to | Camera op/game side editor for Minnesota sports teams and various events.* See the video at https://dronelife.com/2019/12/13/airvuz-video-of-the-week-holiday-lights-from-rice-park-st-paul/

DroneDeploy is using drones to monitor the Great Barrier Reef Josh Spires Dec. 13th 2019

DroneDeploy, the drone software company in Silicon Valley, will soon be opening up shop in Australia. The company will help the Great Barrier Reef Marine Park Authority monitor the deteriorating ocean habitat.

DroneDeploy managed to raise $35 million in series D funding, thanks to Australian venture capital firm AirTree Ventures and Bessemer Venture Partners. James Cameron of AirTree Ventures said: *The commercial drone market here is one of the biggest anywhere in the world. There's a whole army of Australian drone operators, and in the future, there's all sorts of exciting things around the corner.*

DroneDeploy will allow the Great Barrier Reef Marine Park Authority to use predominantly autonomous drones to capture images of the Great Barrier Reef and turn the images into a data-rich map. The map will allow the authority to track and continue to fix the damaged reef. https://dronedj.com/2019/12/13/dronedeploy-drones-monitor-great-barrier-reef/

Drones will track migrants crossing English Channel APPLICATION CRIME NEWS SURVEILLANCE UK SAM LEWIS DECEMBER 9, 2019

The UK government will use drones to monitor its southern borders for migrants attempting to enter the country illegally. The announcement

Robert Rea | Axcel Innovation | Charlottesville and Portsmouth, VA
robert.rea@axcel.us | 757-309-5869 | www.axcelinnovation.com

follows news that 111 migrants were discovered last week in eight separate incidents.

From Eastbourne in Sussex to Margate, Kent, drones will monitor the English Channel within the next three months. There is currently a danger zone flight risk warning in place to ensure that pilots avoid the area, though the CAA adds that the 1,200 ft restriction on drone height means that this will not affect commercial flights.

The Home Office has not commented on who will fly the drones, nor who will be the provider. It did confirm that they will be based at Lydd Airport in Kent.

This comes after news in June that the French government was considering a similar approach to tackle human trafficking gangs. https://www.commercialdroneprofessional.com/drones-will-track-migrants-crossing-english-channel/?utm_source=Email+Campaign&utm_medium=email&utm_campaign=45819-319522-Commercial+Drone+Professional+DNA+-+2019-12-14

15Dec19

Drones Provide a New Frontier in Hurricane Observations

8 DEC 2019, 2:22 AM

NOAA scientist Joe Cione, lead author of a new paper on using disposable drones for hurricane observations, holds a Coyote drone in front of a NOAA P-3 "hurricane hunter" research aircraft at McDill Air Force Base in Tampa, Fla.

"We have an instrument to collect data that we've never been able to collect before," said NCAR scientist George Bryan, a co-author of the new paper. "This is a new frontier in measuring the atmosphere."

Bryan said the drone's measurements may also help answer a longstanding question about the interplay of hurricane winds and the ocean surface. Strong winds typically whip up ocean waves, which then exert a drag on the winds that can slow them down. Some evidence, however, indicates that hurricane-force winds cause waves to break in a way that would not exert such a drag, as well as stirring up so much froth that the water surface essentially has a lubricating effect.

"With the drone, we can get direct measurements of these processes for the first time," Bryan said. "These data are crucial to help us configure our models to produce better simulations and forecasts." https://www.weathernationtv.com/news/drone-provide-a-new-frontier-in-hurricane-observations/?utm_source=Airborne+International+Response+Team+%28AIRT%29+News+List&utm_ca

Robert Rea | Axcel Innovation | Charlottesville and Portsmouth, VA
robert.rea@axcel.us | 757-309-5869 | www.axcelinnovation.com

mpaign=8bca77c1ad-EMAIL_CAMPAIGN_2019_12_15_12_56&utm_medium=email&utm_term=0_2ecada6f57-8bca77c1ad-33089729

16Dec19

US Air Force completes initial flight tests of Ultra LEAP UAS 13 DECEMBER 2019

The US Air Force Research Laboratory has concluded the initial flight tests of the Ultra Long Endurance Aircraft Platform (Ultra LEAP) unmanned aerial system.

The Ultra LEAP is equipped with a customizable intelligence, surveillance and reconnaissance suite to enable long-endurance missions. AFRL conducted a flight demonstration that lasted for two and a half days from 9 to 11 December.

The continuous flight demonstration was the last in a series of flight tests that started in February at a military test facility in Utah.

Ultra LEAP is based on a cost-effective, high-performance commercial airframe that was modified to enable autonomous takeoff and landing capabilities. https://www.airforce-technology.com/news/us-air-force-completes-initial-flight-tests-of-ultra-leap-uas/

Europe Challenges Amateurs to be the First to Catch a Signal from Brand New Satellite Chelsea Gohd 3 days ago

The Ops-Sat cubesat is a new ESA satellite designed explicitly for experimentation.

Are you a passionate, space-loving radio amateur? You could be the first to catch a signal from the European Space Agency's brand new experimental satellite.

Next week (Dec. 17), ESA will be launching OPS-SAT, a new cubesat, on a Soyuz rocket from Kourou, French Guiana. The satellite will launch with ESA's Cheops exoplanet-tracker. After it reaches space, OPS-SAT will deploy its solar panels and ultra-high frequency antenna. It will then start signals back home to Earth.

It is then that radio amateurs will have an opportunity to catch the first signals from this small satellite and find it out in the cosmos, per a request from ESA's mission control team in

Robert Rea | Axcel Innovation | Charlottesville and Portsmouth, VA
robert.rea@axcel.us | 757-309-5869 | www.axcelinnovation.com

Darmstadt, Germany. "Experimenters" can use onboard tools to test software and apps. https://www.space.com/esa-public-help-amateur-radio-ops-sat-cubesat.html

US Justice Department Updates Drone Policy to Address Cybersecurity, Privacy Concerns NICOLE LINDSEY·DECEMBER 12, 2019

The U.S. Justice Department, which often uses drones as part of its investigations, has released a new policy update on how it can use these Unmanned Aircraft Systems. The updated policy will take the place of its former 2015 policy guidance, which outlined a basic framework for how the Justice Department should be using drones. While much of this basic framework remains unchanged, the Department has updated the policy to include provisions for both cybersecurity evaluations and the protection of privacy and civil liberties.

Given the heightened concerns around corporate espionage and state-sponsored spying from rival nations such as China, the U.S. Justice Department is now making a cybersecurity evaluation mandatory for any new acquisition of UAS technology or components. Citing potential risks to the Justice Department's supply chain and computer network, the new drone policy will require much greater attention to the source and origin of any new drone added to the DOJ fleet. Cybersecurity evaluations will be particularly important for those drones flying over sensitive infrastructure targets or heavily restricted airspace where defense or intelligence facilities are located. https://www.cpomagazine.com/cyber-security/us-justice-department-updates-drone-policy-to-address-cybersecurity-privacy-concerns/

NASA Plans Additional Commercial Smallsat Data, Imagery Procurement Mary-Louise Hoffman December 16, 2019 Contract Awards, News

Kevin Murphy, a NASA program executive, said the space agency has determined that Earth science data from two commercial satellite operators meet its quality and utilization requirements.

NASA plans to continue procurement of imagery products from Maxar Technologies (NYSE: MAXR) and Planet through the Private Sector Small Constellation Satellite Data Product Pilot program, the report noted. Maxar, Planet and Spire received sole-source contracts in September 2018 to provide test smallsat data sets.

NASA continues to evaluate Spire's data offering and aims to create an on-ramp process to increase the number of vendors that can support the Commercial Smallsat Data Acquisition Program. The agency seeks unlimited access to data and imagery from an International Space

Robert Rea | Axcel Innovation | Charlottesville and Portsmouth, VA
robert.rea@axcel.us | 757-309-5869 | www.axcelinnovation.com

Station-based hyperspectral sensor that was jointly built by the German Aerospace Center and Teledyne Brown Engineering. https://www.govconwire.com/2019/12/nasa-plans-additional-commercial-smallsat-data-imagery-procurement/

German drone startup Wingcopter receives seven-digit investment to continue saving lives Charlotte Tucker December 13, 2019

The Darmstadt-based drone startup Wingcopter, founded in 2017, has today announced securing a seven-digit financing led by the Singapore-based Corecam Capital Partners.

Wingcopter develops and produces autonomously flying delivery drones for social and civilian applications, such as speeding up life-saving medicine delivery for remote islands – true to the company's guiding principle "Technology with a Purpose". With its patented tilt-rotor mechanism, the startup closes the gap between commercial drones, helicopters and fixed-wing aircraft.

With the funds raised, the 35-member team, headed by three founders Tom Plümmer (CEO), Jonathan Hesselbarth (CTO) and Ansgar Kadura (COO), intends to bring in further specialists, speed up the development of the next generation and expand its global maintenance and sales network. Today, Wingcopter serves clients in 10 countries.

Martin Lechner, Managing Partner of Corecam Capital Partners, is convinced: *"The investment in Wingcopter is the ideal addition to our existing portfolio in the fast-growing drone technology market. Their unique tilt-rotor mechanism as well as the strong global patent protection and the interest of blue-chip customers were decisive for us".* https://www.eu-startups.com/2019/12/german-drone-startup-wingcopter-receives-seven-digit-investment-to-continue-saving-lives/

Raleigh startup PrecisionHawk raises $32 million and moves headquarters downtown ZACHERY EANES DECEMBER 11, 2019

PrecisionHawk, a fast-growing drone technology startup in Raleigh, has landed another $32 million in funding from investors, as it attempts to take advantage of a growing market for drone usage. The company, which uses its software to run analyses of data gathered by drone footage, has seen tremendous demand from industries like agriculture and utilities in recent years. With its new funding, it is betting it will see growth in even more industries.

Robert Rea | Axcel Innovation | Charlottesville and Portsmouth, VA
robert.rea@axcel.us | 757-309-5869 | www.axcelinnovation.com

PrecisionHawk has now raised more than $135 million in total, making it one of the most well-funded startups in the Triangle. Along with the growth in funding, the startup's client list has also expanded — it now counts companies like Duke Energy, Pacific Gas and Electric, Florida Power & Light and Syngenta as clients.
https://www.newsobserver.com/news/business/article238225024.html

Counter-Drone Tech STEVE SURFARO DECEMBER 12, 2019

Security Business Dec. 2019 Cover Story: Active and passive drone defense technologies can provide integrators a path into a variety of vertical markets that are hungry for solutions

Passive counter-drone systems typically leverage some form of RF scanning, radar, Lidar, video-based object recognition, and detection of drone connectivity suites.

As the use of advanced and affordable drones with sophisticated sensors expands, we are witnessing an unstoppable threat escalation across many industries and vertical markets. Terrorists can operate commercially available small drones or unmanned aerial vehicles, dropping explosive payloads, harmful substances, pulsed energy and RF jamming signals, or conducting illicit audio/visual surveillance. As former Department of Homeland Security Secretary Kirstjen Nielsen said in a letter to the ranking member of the Committee on Homeland Security and Government Affairs: "the threat is real."

The U.S. Senate recently passed bipartisan, co-sponsored legislation – the Preventing Emerging Threats Act of 2018 – which represents a critical step in enabling the government to provide legal authorities to detect, track, and mitigate threats from small drones. The bill also provides the Department of Homeland Security with specific authority to develop, test and deploy advanced counter-drone technology to mitigate the threat.
https://www.securityinfowatch.com/perimeter-security/robotics/anti-drone-technologies/article/21114729/counterdrone-tech

Azur Drones – This Security Guard is On Duty 24/7 Patrolling Dunkirk Port Harry McNabb December 16, 2019

France's Azur Drones offers a truly autonomous, drone in a box solution for security. It's a powerful and sophisticated system designed to secure critical infrastructure – and with European approval to fly autonomously beyond visual line of sight, Azur is

poised to be Europe's leading player in security drones.

Azur Drones is now providing their drone security solution to the Grand Port Maritime of Dunkerque, one of the largest ports in France. It's a perfect job for a drone. Read on for our exclusive interview with Azur CEO Jean-Marc Crépin on how they got the business, the roles for both drones and people in protecting critical facilities, and what the market looks like in autonomous security solutions. https://dronelife.com/2019/12/16/dronelife-exclusive-azur-drones-this-security-guard-is-on-duty-24-7-patrolling-dunkirk-port/

Agriculture drones market sows the seeds for massive growth by 2025

AGRICULTURE APPLICATION BUSINESS FINANCIAL NEWS UNITED STATES SAM LEWIS DECEMBER 16, 2019

The global agriculture drones market is forecast to grow at a rate of 31.1% per year, reaching $5.19bn by mid-decade.

Researchandmarketing.com suggests this is due to growing pressure on the global food supply and need for water consumption, as well as increased drone funding.

The use of drones in agriculture will only be limited by the technological limitations of the drones themselves, says researchandmarketing.com. The website predicts that North America will command the bulk of the agriculture drone market in 2019.

Rising labor costs, population growth and favorable regulations regarding small drones in agriculture are all facilitating growth in North America.
https://www.commercialdroneprofessional.com/agriculture-drones-market-sows-the-seeds-for-massive-growth-by-2025/?utm_source=Email+Campaign&utm_medium=email&utm_campaign=45819-319613-Commercial+Drone+Professional+DNA+-+2019-12-16

NCDOT Drone Program Wins Cleantech Innovation Award December 16, 2019 Drones At Work | News

The N.C. Department of Transportation's innovative drone program has earned another award, this time for the use of drones to deliver medical supplies and the positive environmental impact the initiative will have in the future. The Cleantech Innovation Awards was organized this year to recognize and honor the individuals and organizations driving cleantech

Robert Rea | Axcel Innovation | Charlottesville and Portsmouth, VA
robert.rea@axcel.us | 757-309-5869 | www.axcelinnovation.com

innovation and deployment in the Triangle region. The Research Triangle Cleantech Cluster, an industry-led initiative focused on accelerating clean technology, organized the awards program.

The NCDOT program won the Transportation Innovation Award, awarded to a transportation or mobility project that uses innovative cleantech solutions to create positive impacts for environment, economy, and residents.

NCDOT's pioneering use of drones in medical deliveries is the first step towards the more regular use of drones to deliver goods of all kinds in the future, potentially removing vehicles from the roads and decreasing greenhouse gas emissions. Since taking flight in March of this year, medical samples and supplies have been delivered more than 1,600 times by drone across the WakeMed campus in Raleigh. https://uasweekly.com/2019/12/16/ncdot-drone-program-wins-cleantech-innovation-award/?utm_source=newsletter&utm_medium=email&utm_campaign=uasweekly_daily_newsletter_12_16_2019&utm_term=2019-12-16

17Dec19

How self-driving car tech could help drones monitor power lines to prevent wildfires 12.16.19 WORLD CHANGING IDEAS KRISTIN TOUSSAINT

Quanergy is well known for building the LiDAR sensors that help power autonomous vehicles. LIDAR works like radar, but with light waves instead of radio waves. It can also be used to map power lines, potentially helping utility companies inspect their miles and miles of lines for encroaching trees, or finding downed wires before they start a blaze.

California has more than 150,000 miles of overhead power lines. Imagine you connect the sensor to a drone. It would create a detailed image, showing the curve of the hanging wires and also nearby obstacles that could be a fire hazard if that wire were to break.

A drone could map 40 acres in 15 to 20 minutes. Companies can send out these LiDAR-equipped drones to scan a section of power lines for an hour, after which the drone would send all that information back to the company so they can see if there are any issues in need of

attention. The drones could also automatically alert the companies of changes, like movement from fallen power lines. And it can be done without much preparation or staff because it's literally just flying a drone. https://www.fastcompany.com/90442316/how-self-driving-car-tech-could-help-drones-monitor-power-lines-to-prevent-wildfires

NATO Unmanned Helikites Extend Range of USVs 17 Dec 2019 Mike Ball

Airborne Communications, a provider of over-the-horizon aerial communications solutions, has announced that it has provided NATO with unmanned Helikites that were used to extend the operational coverage of unmanned surface vehicles by up to ten times during a naval exercise.

The compact, all-weather Helikites were deployed during the NATO REPMUS 19 exercise that took place off the coast of Troia, Portugal. They were equipped with MANET radios, providing a relay link to USVs that allowed streaming video and broadband communications up to 53 km out to sea. The USVs were constantly monitored and controlled from a remote operations room, and were used during the exercise to successfully intercept a manned vessel simulating an attack on a US frigate. They were also used to relay a real-time video feed from a Puma UAV down to Portuguese marines performing a beach-storming exercise and simulated attack on an enemy building.

Multiple changes of radio equipment and antennas were performed rapidly and efficiently during the exercises. The Helikites endured up to 35 mph winds at altitudes of up to 450 ft, with no loss in performance. The exercises demonstrated the viability of Helikites as a persistent, rugged over-the-horizon radio relay that can be deployed from land or from manned or unmanned vessels. https://www.unmannedsystemstechnology.com/2019/12/nato-unmanned-helikites-extend-range-of-usvs/?utm_source=UST+eBrief&utm_campaign=93ffb147a2-eBrief_2019_17_Dec&utm_medium=email&utm_term=0_6fc3c01e8d-93ffb147a2-111778317

Gannet's waterproof fishing drone to launch this month NEWS TECHNOLOGY UNITED STATES SAM LEWIS DECEMBER 17, 2019

The drones are fully waterproof and release 3.5kg payloads of bait hundreds of meters away.

Gannet claims the drone can also be used by emergency rescue services at sea.

Robert Rea | Axcel Innovation | Charlottesville and Portsmouth, VA
robert.rea@axcel.us | 757-309-5869 | www.axcelinnovation.com

The company also says the drone is well-equipped to fly in extreme weather conditions. As well as being waterproof it is sandproof and the controller is GPS-enabled. It uses a special barometric pressure control system to adjust its flight altitude, something all waterproof drones must do. If the air drawn in is particularly moist, it will simply run out of the system at a later stage, causing no damage to the electronics.

The Gannet Pro and the Gannet Pro+ start at £897.95 and £1,122.63 respectively.
https://www.commercialdroneprofessional.com/gannets-waterproof-fishing-drone-to-launch-this-month/?utm_source=Email+Campaign&utm_medium=email&utm_campaign=45819-319749-Commercial+Drone+Professional+DNA+-+2019-12-17

Turkey deploys surveillance drone in northern Cyprus The Associated Press

A Turkish-made Bayraktar TB2 drone is seen shortly after its landing at an airport in Gecitkala, known as Lefkoniko in Greek, in Cyprus, Monday.

ANKARA, Turkey — Turkey has dispatched a surveillance and reconnaissance drone to the breakaway north of ethnically divided island nation of Cyprus amid tensions over offshore oil and gas exploration.

The Anadolu news agency said the Turkish-made Bayraktar TB2 drone took off from an airbase in Dalaman, Turkey, and touched down Monday at the airport in Gecitkala on Cyprus. Kudret Ozersay, foreign minister of the self-declared Turkish Cypriot state, told reporters Sunday that the Turkish deployment would be limited to unarmed drones as there was “no need” for armed ones. It’s unclear what the drones will be specifically tasked to do.
https://www.navytimes.com/news/your-navy/2019/12/16/turkey-deploys-surveillance-drone-in-northern-cyprus/?utm_source=twitter.com&utm_medium=social&utm_campaign=Socialflow+NAV

18Dec19

FAA Taps Drone Experts to Help Develop New Pilot Skills Test Jason Reaganon: December 17, 2019

The federal agency last week announced the selection of 12 corporations and groups to advise the agency in developing “test administration requirements for the recreational Unmanned Aircraft Systems aeronautical knowledge and safety test.”

Robert Rea | Axcel Innovation | Charlottesville and Portsmouth, VA
robert.rea@axcel.us | 757-309-5869 | www.axcelinnovation.com

Thanks to a 2018 law, recreational drone pilots must pass an online knowledge and safety test. Pilots are also required to carry proof of successful passage while they operate a drone. The agency is currently developing a new test and wants industry experts to review the process.

The advising group will include representatives from:

- Embry Riddle Aeronautical University
- Drone Launch Academy Southeastern University
- Science Applications International Corp. (SAIC)
- DJI
- Horizon Hobby, LLC.
- Unmanned Aerial Vehicle (UAV) Coach
- King Schools
- Unmanned Safety Institute
- First Person View (FPV) Freedom Coalition
- Aircraft Owners and Pilots Association
- Academy of Model Aeronautics
- Drone Racing League

https://dronelife.com/2019/12/17/faa-taps-drone-experts-develop-pilot-test/

PrecisionHawk raises $32M for next generation of drone software and services

Haye Kesteloo Dec. 17th 2019

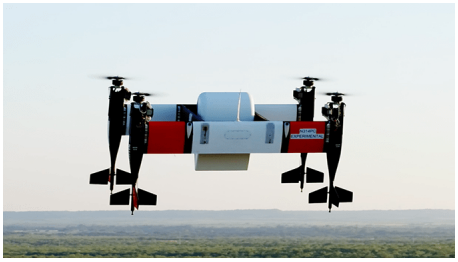
PrecisionHawk is pleased to announce a $32 million investment from venture investors including Millennium Technology Value Partners, Third Point Ventures, Eastward Capital Partners, and others.

The company will use the financing to develop the next generation of PrecisionAnalytics and their A.I.-powered aerial data analytics platform while also investing in sales and servicing operations to address the growing demand for commercial drone services.

Some of the world's largest organizations–including five of the top 10 utility companies, the largest provider of communications infrastructure in the United States, and the "Big Six" providers of seed and agricultural chemicals–work with us to strengthen their operations using drone technology. From managing asset inventory to measuring the health of telecommunications towers, electricity distribution lines or even crops, our drone-based

solutions are helping visionary business leaders change the way work gets done. https://dronedj.com/2019/12/17/precisionhawk-raises-32m/

Choctaw Nation of Oklahoma and Bell Announce Agreement as part of the FAA UASIPP December 16, 2019 News



The Choctaw Nation of Oklahoma (CNO) and Bell Textron Inc. announced today an agreement to add Bell to the CNO UASIPP team and begin testing some of the Bell innovations and systems on CNO-owned property in rural southeastern Oklahoma.

The flights and tests will be conducted as part of the FAA Unmanned Aircraft Systems Integration Pilot Program in preparation for future planned beyond visual line of sight and other UAS operations.

Future missions for the team include advanced drone operations – including BVLOS – for agricultural applications, public safety operations, infrastructure inspections, safe operations over people, and weather related missions. https://uasweekly.com/2019/12/16/choctaw-nation-of-oklahoma-and-bell-announce-agreement-as-part-of-the-faa-uasipp/?utm_source=newsletter&utm_medium=email&utm_campaign=uasweekly_daily_newsletter_12_17_2019&utm_term=2019-12-17

Research with drones shows that Northwest killer whales are shrinking Haye Kesteloo Dec. 17th 2019

Research with drones shows that Northwest killer whales are shrinking in size. Drone photos show how closely the health and size of the killer whales are related to the size of their favorite prey, big chinook salmon.

The findings, published last month in the peer-reviewed scientific journal Endangered Species Research, were based on aerial photos taken by drone of whales in both the southern and northern resident orca populations.

It was a significant difference: The stunted whales growing up in lean times were on average nearly half a meter shorter than older adults, according to the paper published by authors from SR3: Sealife Response, Rehabilitation and Research, the National Oceanic and Atmospheric Administration (NOAA), Vancouver Aquarium and Southall Environmental Associates (SEA) Inc.,

an environmental consulting firm. https://dronedj.com/2019/12/17/research-with-drones-northwest-killer-whales-shrinking/

Market Study: 400,000 Air Taxis by 2040 Paul Bertorelli December 17, 2019

In just two decades, there could be some 430,000 air taxis operating worldwide, according to industry analyst Frost & Sullivan. The company further predicts the push for urban air mobility will emerge not from the U.S. or Europe, but from the Middle East, commencing in just two years.

"The United Arab Emirates, New Zealand, and Singapore are expected to be the first adopters of air taxis, while Brazil and Mexico … [will be] leveraging their helicopter taxi expertise," said Joe Praveen Vijayakumar, Frost & Sullivan's mobility analyst. He said nearly 50 cities are studying the feasibility of UAM, initially for cargo operations but later for passenger flights over congested cityscapes. https://www.avweb.com/aviation-news/market-study-400000-air-taxis-by-2040/?MailingID=250&utm_source=ActiveCampaign&utm_medium=email&utm_content=Boeing+Suspends+737+MAX+Production%2C+Round-the-World+Record+Broken%2C+400K+Air+Taxis+Needed+by+2040&utm_campaign=Boeing+Suspends+737+MAX+Production%2C+Round-the-World+Record+Broken%2C+400K+Air+Taxis+Needed+by+2040+-+Wednesday+December+18%2C+2019

Walkera: This Drone Company Develops Firefighting Solutions Unlike Any We've Seen Harry McNabb December 18, 2019

Chinese drone manufacturer Walkera has made the move from racing drones to public services and enterprise solutions – but their engineering expertise is still at the core of the business. In China, Walkera claims the lead in the public services sector. DRONELIFE spoke with Webber For, VP of Marketing, about their hybrid drone solutions for long distance and heavy load applications in firefighting, police and agriculture – and what Walkera does better than anyone else on the market.

DL: Tell us how Walkera is different from other players in the firefighting space.

WF: "We were the first player to embed a night vision scope, 30 x

Robert Rea | Axcel Innovation | Charlottesville and Portsmouth, VA
robert.rea@axcel.us | 757-309-5869 | www.axcelinnovation.com

optical zoom camera in firefighting drones. We have recently launched a cluster solution which includes different types of fire-fighting drones. The cluster can work synergistically and spray dry powder on the fire one by one. It's a really exciting outcome from our latest research. The most interesting application is that our drones can put out fires in tall buildings with windows. One of our products is equipped with a rocket launcher that can shoot bullets to break windows and glass curtain walls."

DL: That's really interesting. What challenges do skyscrapers in particular pose for firefighters?

WF: "The skyscrapers are so high that even the ladder trucks can hardly deal with them. Firefighters have to climb stairs with a heavy load – it takes time, which leads firefighters and trapped residents in danger.

Walkera is really innovating in firefighting drones which can slow down the fire diffusion before the firefighters arrive, and help them make correct decisions. This is where our value lies. There is strong demand not only in China, but also in many developed cities around the world." https://dronelife.com/2019/12/18/walkera-this-drone-company-develops-firefighting-solutions-unlike-any-weve-seen/

Connecticut signs with DroneUp to give public sector agencies access to drone services APPLICATION BUSINESS NEWS UNITED STATES ALEX DOUGLAS DECEMBER 18, 2019

Greg Mooney, contract specialist with the state of Connecticut, said: "We are eager to provide new drone technology services to our state, and we are excited that our local drone pilot operators will have the opportunity to provide these services."

DroneUp, an end-to-end drone pilot service provider for aerial data collection was awarded the Unmanned Aerial Systems Services Master Agreement by the Commonwealth of Virginia in August 2019. It provides UAS services to all state agencies, institutions of higher education, and other public bodies and entities.

The services under the award are available for use by all 50 states, the District of Columbia, and the territories of the United States through the National Association of State Procurement Officials ValuePoint Cooperative Purchasing Organization.

The State of Connecticut will be able to use the award for the benefit of state departments, institutions, agencies, political subdivisions, and other eligible entities.

Robert Rea | Axcel Innovation | Charlottesville and Portsmouth, VA
robert.rea@axcel.us | 757-309-5869 | www.axcelinnovation.com

https://www.commercialdroneprofessional.com/connecticut-signs-with-droneup-to-give-public-sector-agencies-access-to-drone-services/?utm_source=Email+Campaign&utm_medium=email&utm_campaign=45819-319839-Commercial+Drone+Professional+DNA+-+2019-12-18

19Dec19

Study: Counter-Drone Systems Proliferate, Challenges Endure Graham

Warwick December 16, 2019

Counter-drone systems continue to proliferate on the market, but technical and operational challenges in countering small unmanned aircraft systems have not yet been fully surmounted, says a new report by the Center for the Study of the Drone at Bard College, New York.

The second edition of the Center's Counter-Drone Systems report lists 537 systems marketed by 227 companies in 38 countries, up from 235 in the first edition published in February 2018. This is despite removing 24 products from the database that no longer appear to be available.

Citing a March 2019 solicitation by the Pentagon's Defense Innovation Unit which said "it has proven difficult to identify and mitigate threats using currently fielded technologies," the report says "dozens of background interviews with military and law enforcement personnel have validated this assertion."

The challenges extend beyond the issue of effectiveness "and include complex questions around safety, practicality, policy and legality," says the report's author, Arthur Holland Michel, founder and co-director of the Center. https://aviationweek.com/defense-space/study-counter-drone-systems-proliferate-challenges-endure

UAV Turbines Conducts First Flight of Monarch 5 UAV Microturbine Engine

Brenda Marie Riverson: December 19, 2019 News

UAV Turbines, a manufacturer of microturbine technology for unmanned aircraft, has completed the initial flight of its Monarch 5 turboprop engine designed for mid-sized drones, National Defense Magazine reported Wednesday.

Robert Rea | Axcel Innovation | Charlottesville and Portsmouth, VA
robert.rea@axcel.us | 757-309-5869 | www.axcelinnovation.com

In September, an unmanned aircraft fitted with the Monarch 5 engine took off from Griffiss International Airport in Rome, N.Y. for an inaugural flight. The engine also includes a constant-speed propeller that maintains blade pitch to ensure a consistent rotational speed. The flight test builds on the company's work under a five-year contract with the U.S. Army to develop an engine with a 200-horsepower capacity.

UAV Turbines is headquartered in Miami and offers lightweight microturbine engines to support propulsion and power generation functions for small to mid-size UAVs.
https://blog.executivebiz.com/2019/12/uav-turbines-conducts-first-flight-of-monarch-5-uav-microturbine-engine/

David Yoel: American Aerospace Makes UAS Market Push through PAE ISR Acquisition

Brenda Marie Rivers December 19, 2019 M&A Activity, News

David Yoel

American Aerospace Technologies Inc. has bought unmanned aircraft system manufacturer PAE ISR for an undisclosed amount in a move to grow AATI's UAS offerings. AATI said Wednesday the acquisition was part of PAE's efforts to divest original equipment manufacturing operations and financed by New York-based Riva Ridge Capital Management.

PAE ISR developed the Resolute Eagle, a Group 3 UAS platform that employs conventional and hybrid vertical takeoff-and-landing configurations. The system is designed to work with AATI's cloud-based InstiMaps threat detection system, which uses a multispectral sensor and an artificial intelligence technology for data visualization. David Yoel, founder and CEO of AATI, said he foresees the potential of beyond visual line-of-sight UAS technology in the critical infrastructure area.

Mountain View, Calif.-based AATI offers unmanned and manned aircraft flight, UAS airspace development, payload design and sensor integration services.
https://www.govconwire.com/2019/12/david-yoel-american-aerospace-makes-uas-market-push-through-pae-isr-acquisition/

Kespry's George Mathew on Automation, Enterprise Scale, and What's Next

Miriam McNabb December 20, 2019

Kespry has always been an enterprise-focused drone solution. The company realized early that ease of use was key to adoption, and they offered one of the first automated, no-joystick flight solutions. As the industry matures and automation becomes more available – and more sophisticated – we interviewed Kespry CEO George Mathew for his views on automation, enterprise scales, and what's needed to take the industry forward in 2020.

Mathew says automation has been a game changer for Kespry, and it is only getting more important. "Automation was by far one of the key differentiators for Kespry – and I don't think that's changed, if anything it is accelerating," says Mathew. "I think that this is the natural way that most scaled out operations are going to occur around the world. There aren't enough pilots in the world to be able to manually process the data, but with automation and AI, it can work."

As the industry moves into use cases like delivery, regulations accommodate flight beyond visual line of sight and, in the future, multiple drones per pilot, Mathew sees the need for automated flight and data collection increasing further. "This is the new normal for the industry," says Mathew, commenting that many new offerings on the recreational market now offer some sort of automation. https://dronelife.com/2019/12/20/kesprys-george-mathew-on-automation-enterprise-scale-and-whats-next-for-the-drone-industry/