UAS and SmallSat Weekly News

Contents

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Unmanned air travel is closer than we think. A few tech entrepreneurs demo drones LISA VERNON SPARKS DAILY PRESS OCT 07, 2021

An Advanced Aircraft Company hybrid advanced multi-rotor small, unmanned aircraft system lifts off from the ground of Fort Monroe during the Association for Unmanned Vehicle Systems International Hampton Roads chapter demonstration day

HAMPTON — Experts say unmanned air travel is on the horizon, and concepts such as air taxis and other unmanned cargo transport — even pizza delivery — are much closer to reality than ever.

To show how close, a few local aerial tech entrepreneurs demoed their crafts Wednesday to a few dozen spectators. The program was hosted by the local chapter of the Association for Unmanned Vehicle Systems International and the aviation firm Longbow Group.

The companies showed off their drones at Longbow's test center at Fort Monroe, including those capable of mapping, surveying, underwater surveillance, and robotics.

"The first question to ask yourself, if you had a magic carpet, what would you use a magic carpet for?" said Bill Fredericks, who founded Hampton-based Advanced Aircraft Company, one of the tech entrepreneurial companies demonstrating Wednesday. "That's a very open-ended question. Right now, we're currently focused on survey mapping and infrastructure inspection. But there are many other use cases."

In May, **Longbow announced a partnership with NASA Langley Research Center** to develop unmanned aerial flight paths between Langley's campus and its Fort Monroe location that would help drones navigate air space when sharing with other aircraft. Think of it as air space management so drones won't crash into each other or into other commercial aircraft, said Fredericks, a former NASA engineer. https://www.dailypress.com/business/dp-nw-hampton-fort-monroe-drones-20211007-ghw4vxercvc57avlklkd76ikhe-story.html?utm_source=newsletter&utm_medium=email&utm_campaign=Inside%20Business&utm_content=1121633693013#nws=true

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EHang reveals AAV exploratory partnership with Spain's police Bruce Crumley - Oct. 8th 2021

The AAV collaboration between EHang and Spain's Policia Nacional was revealed during the country's premiere drone event, Expódronica, which is being staged in conjunction with the World Air Traffic Management Congress in Madrid. EHang – which has long been rumored to be consulting with Spanish police about AAV deployment in future operations – stated the two groups are indeed looking into various use case scenarios. It said the pair would continue pursuing discussions of how those craft can be flown as a means of modernizing Spain's law enforcement assets while seeking to eliminate the carbon emissions of current transport options.

The move marks a significant inroad for EHang as it moves its craft through testing, certification, and ultimate AAV operation by urban mobility service providers and public organizations around the world. It's also a noteworthy partnership for a major, strategic Chinese company to establish with a European national law enforcement body during a time of worsening US-China relations that have complicated European Union efforts to triangulate between the two sides.

As they explore those uses, EHang and the Policia Nacional will examine how AAV can be deployed in emergency situations like search and rescue, surveillance, and other critical and time-sensitive missions. They'll be joined in that effort by experts from the Polytechnic University of Valencia who will assist with applied trial flights, case analyses of craft performance, and finding ways of accelerating and enhancing deployment.
https://dronedj.com/2021/10/08/ehang-reveals-aav-exploratory-partnership-with-spains-police/

U.S. Army Awards AeroVironment $11.7 Million Contract Option for Raven Modifications October 8, 2021 Military | News

AeroVironment, Inc. today announced the United States Army exercised the third and final option under the Flight Control Systems domain of the Army's multi-year small unmanned aircraft systems contract on Sept. 9, 2021. The value of the contract option is $11,731,740 and includes flight control system

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kits, ground control stations and tail booms for the Army's existing fleet of Raven® tactical UAS. Delivery is scheduled to be completed by September 2022. The contract option brings the total value of the contract to $54,632,776.

"The Raven system was created to provide frontline forces with real-time, accurate over-the-horizon situational awareness in conflict areas; a capability that was unavailable at the time of its inception," said Trace Stevenson, vice president and product line general manager of small UAS.

The Raven system is designed for rapid deployment and high mobility for operations requiring low-altitude intelligence, surveillance, and reconnaissance. With a wingspan of 4.5 feet and weighing just 4.2 pounds, the hand-launched Raven provides situational awareness, day or night, with an operational range of 6.2 miles. The Raven delivers real-time video or infrared imagery to ground control and remote viewing stations. https://uasweekly.com/2021/10/08/u-s-army-awards-aerovironment-11-7-million-contract-option-for-raven-radio-frequency-modifications-under-existing-fcs-contract/?utm_source=rss&utm_medium=rss&utm_campaign=u-s-army-awards-aerovironment-11-7-million-contract-option-for-raven-radio-frequency-modifications-under-existing-fcs-contract&utm_term=2021-10-08

Pennsylvania man shoots down drone inspecting utility poles Ishveena Singh - Oct. 8th 2021

Exelon Business Services was contracted through Claverack Rural Electric Cooperative to inspect their utility poles and powerlines in Sayre. On September 8, around 1 p.m., a drone operator from Exelon lost contact with his DJI drone after hearing multiple gunshots in the area.

Pennsylvania State Police was called in and the officers checked residences in the area where Exelon last had contact with the drone. The aerial surveying device was discovered in a trash can behind a house inhabited by 55-year-old Gregory Ferro. When quizzed, Ferro admitted to putting the drone in the garbage bin but "did not want to discuss how it happened."

State police categorized the incident as criminal mischief resulting in damages worth more than $1,000. Police also say the drone is worth $2,000, and charges will be filed in Bradford County.

In July, an airborne drone belonging to Lake County Sheriff's Office in Florida met an untimely death when a man opened gunfire at it. The drone was investigating a possible burglary at the time, but the shooter thought the drone was sent to harass him.

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The deputies were quick to locate the culprit, a 50-year-old Wendell Goney, at the building next door. Goney told the law enforcement agents he used his .22 caliber rifle to shoot down the drone that caught fire when it hit the ground. Goney was placed under arrest. https://dronedj.com/2021/10/08/pennsylvania-man-shoots-at-drone/#more-68999

U.S. Army Looks at New Ways to Beat Drones Brian Everstine October 08, 2021

The U.S. Army is taking the lead on the military's effort to counter the proliferation of small UAS.

U.S. forces are operating without complete air superiority, with the threat of small, low-cost unmanned aircraft systems proliferating to the point that the Army's chief says they are the new improvised explosive device.

Countering unmanned aircraft systems has become a major priority for all the services, with the Army looking at near-term fixes through demonstrations of existing technologies and a long-term effort to use the service's major Project Convergence to develop new ways to fight the drones.

The Army wants counter-UAS systems that can "pick them up with our sensors, and then pick the appropriate weapon system to take them down," says U.S. Army Chief of Staff Gen. James C. McConville. "[This] may be a missile, gun, directed energy [or] a high-powered microwave. We'll have multiple arrows in the quiver."

The use of small UAVs, typically commercially available quadcopters outfitted with small explosives, has spread across the Middle East, with high-profile incidents such as the September 2019 Houthi attack on Saudi Aramco facilities. U.S. bases in Iraq have also been targeted by drones. https://aviationweek.com/shows-events/ausa-2020/us-army-looks-new-ways-beat-drones?utm_rid=CPEN1000003332045&utm_campaign=30299&utm_medium=email&elq2=12471a14232d498498a3a337ae982f72

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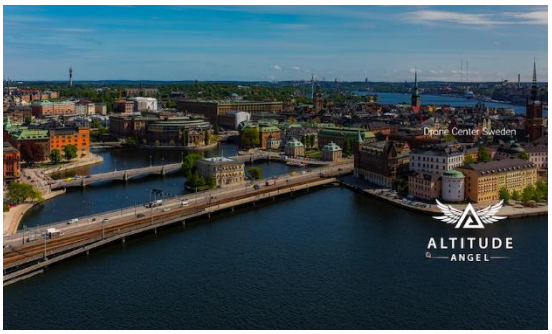
Drone Center Sweden Selects Altitude Angel as the 'Foundation Stone' HEADLINE NEWSINDUSTRY LEADER GEORGINA FORD OCTOBER 7, 2021



Altitude Angel, a UTM (Unified Traffic Management) technology provider, has been retained by the Swedish Transport Administration project PNK4UTM and Research Institute of Sweden (RISE) to implement its GuardianUTM Enterprise platform at Sweden's 2,400km² Drone Center.

Drone Center Sweden is supported by Sweden´s innovation agency Vinnova, the Swedish Transport Administration, Västervik municipality, and is coordinated by RISE, Sweden's state-owned research institute. RISE brings together the private and public sectors and academia to develop services, products, technologies, processes, and materials, contributing to a sustainable future and a competitive Swedish business community.

Project PNK (Positioning, Navigation and Communications) is an initiative to test, document and evaluate the possibility and expediency of using the mobile network to position, navigate and communicate with unmanned aerial vehicles beyond visual line of sight (BVLOS) within Sweden's existing airspace rules and regulations. Together, RISE, Telia, Ericsson, SWEPOS, Drone Center Sweden and other partners in the project will deploy Altitude Angel's GuardianUTM Enterprise platform to safely and securely enable BVLOS drone operations. https://www.altitudeangel.com/news/drone-center-sweden-select-altitude-angel-as-the-foundation-stone-as-it-begins-to-build-national-drone-infrastructure

Delaware police, sheriff's office: New drones provide powerful eyes in the sky

Paul Comstock ThisWeek | USA TODAY NETWORK

Since March, the Delaware Police Department has been equipped with a camera that can spot a person from a mile away – day or night – and identify the GPS coordinates where the person stands.

The camera is carried by a DJI Matrice 300 RTK drone, said officer Jordan Cornwell, program coordinator for the

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department's drone team. The Delaware police have four officers certified to operate the drone, which, Capt. Adam Moore said, is accompanied by a support vehicle and could be deployed rapidly when needed.

The Delaware County Sheriff's Office and police in Hilliard, New Albany and Westerville are among other central Ohio agencies using such drones. The departments say the flying vehicles can search areas far faster than personnel on foot, making the drones highly effective when searching for lost or missing persons – or fleeing suspects.

City police also put their drone in the air over large public gatherings such as the annual Little Brown Jug harness race at the county fairgrounds and the large crowd centered around South Henry Street during July 4 fireworks, Moore said.
https://www.dispatch.com/story/news/local/communities/delaware/2021/10/07/delaware-police-sheriff-new-drones-put-powerful-eyes-sky/6044306001/

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GA-ASI developing modular open systems approach for Gray Eagle 8th October 2021

The Shephard News Team in London

Gray Eagle Extended Range UAS

Modular open systems approach (MOSA) components are currently being tested on a simulator ahead of flight tests in early 2022. Incorporating MOSA on **GE-ER** increment 2 will cover the entire system from aircraft to C2 software.

GA-ASI said implementing MOSA would provide new standards for C2, Future Airborne Capability Environment, Open Mission Systems and Universal Armament Interface.

MOSA would enable faster integration of payloads, communication equipment, artificial intelligence, and machine learning capabilities onto GE-ER.

GA-ASI said this would reduce 'sensor to shooter' timelines and the bandwidth requirements in contested environments. https://www.shephardmedia.com/news/air-warfare/ausa-2021-ga-asi-developing-modular-open-systems-a/?utm_source=Newsletter&utm_medium=email&utm_content=Today+s+Daily+Defence+News+Alert&utm_campaign=Daily+News+Alert+-+4+Oct+2021+-+%28Inveris+ad%29

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Drone Deliveries Take Flight in First-of-its-Kind Trial in Ireland APPLICATION DELIVERY

HEADLINE NEWS GEORGINA FORD OCTOBER 11, 2021

Last week, FedEx Express, in collaboration with Future Mobility Campus Ireland (FMCI) Air, announced the completion of its first scheduled drone last-mile delivery flight in Ireland. The delivery marks the launch of a trial service delivering goods from FMCI, based at Shannon Airport, County Clare, to Foynes Port, County Limerick, Ireland's second-largest port operator and largest bulk port company.

The drone deliveries were conducted by Skyports, an operator of cargo drone deliveries, on behalf of the FMCI Air consortium which also includes Avtrain, Shannon Group and FMCI. The delivery demonstrates the benefits of last-mile service and the commitment by FedEx to exploring the latest innovations.

The delivery is part of a month-long trial which will see many test flights conducted in the Mid-West region beyond visual line of sight between Shannon Airport and Foynes Port, with deliveries anticipated to be made in under 13 minutes. Clare County and Limerick City and County Council have shown their support for the project, highlighting the councils' leading from an innovation perspective. https://www.commercialdroneprofessional.com/drone-deliveries-take-flight-in-first-of-its-kind-trial-in-ireland/

Thales unveils a multi-mission radar for early UAV detection and ground surveillance October 8, 2021 Jenny Beechener Counter-UAS systems and policies

The Ground Observer 20 Multi-Mission (GO20 MM) is a single mode radar for continuous 360° 3D detection, tracking and automatic classification of the full threat spectrum. it is designed for simultaneous ground and low-level air surveillance, providing early UAV detection of micro-drones.

The radar surveys a large volume in 3D, with fast update rates, enabling early detection and automatic classification of drones when they are not yet a threat, providing opportunity for C-UAV measures. Operators can recognize and asses what counter strategy to adopt. In complex scenarios such as asymmetric conflicts or high-density

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combat, the ability to classify automatically and quickly to get a fast situation picture provides tactical advantage.

Compact and modular, the radar is designed to be easily transportable and deployable. In 5 minutes, two soldiers can set it up and quickly redeploy for a new mission, whether on a mast or for off-board operations. It is equipped with a six-pack battery for quiet, long endurance operation. https://www.unmannedairspace.info/counter-uas-systems-and-policies/thales-unveils-ground-observer-20-a-multi-mission-radar-for-early-uav-detection-and-ground-surveillance/

FAA "on track to issue UAM concept of operations 2.0 in first quarter of 2022"

October 7, 2021 Philip Butterworth-Hayes Emerging regulations *Jenny Beechener*

The Federal Aviation Administration (FAA) will deliver an updated version of its Concept of Operations (ConOps) for Urban Air Mobility (UAM) in the first quarter of 2022, said Steve Bradford, FAA Chief Scientist for Architecture and NextGen Development, speaking at the AUVSI webinar *on 6 October 2021.* The work includes workshops to "flesh out" concepts in partnership with the NASA Aeronautics Research Institute.

The FAA released UAM ConOps Version 1.0, developed in association with NASA and industry, in July 2020, to describe early stage, low density urban air taxi operations in the National Airspace System. "UAM ConOps 1.0 brought into existence UAM corridors. While a good starting point, the requirement to fully participate in all airspace classes becomes restrictive."

NASA AAM Mission Manager David Hackenberg said: "The FAA document drives what we want to do at NASA from an R&D perspective. It lays the groundwork and sets the pathway for industry development." Describing the key differences between UAM ConOps 1.0 to 2.0, Steve Bradford said the updated version will be fully coordinated.
https://www.unmannedairspace.info/news-first/faa-on-track-to-issue-uam-concept-of-operations-2-0-in-first-quarter-of-2022-chief-scientist-steve-bradford/

Researchers test drone images, neural computing to fight wildfires Bruce Crumley - Oct. 11th 2021

A group of professors at Indiana's Purdue University has teamed up with computer and information technology graduate student Ziyang Tang to use neural networks and deep learning computers

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to speed up and strengthen the way images from drones can be used in fighting fires. Now, most analyses and decisions are made based on aerial photos taken by humans scouring footage taken over large expanses of burning land. The task is as huge as it is taxing.

Tang's work began when he asked why the increasingly rapid and powerful interpretation and deduction capacities of computers weren't being used to automate the search for wildfire for humans to act on.

Tang and his academic partners went to work trying to harness the processing power that allows computers to detect drone-filmed objects with fixed sizes and regular shapes and apply it to the rapidly changing and unpredictable forms of flames. Tang and his team fed the 4K drone images of a controlled fire into their system. They created what they believe is the first public high-resolution wildfire dataset of 1,400 annotated photos containing 18,449 identifiable object like trucks, people, landscape features, and fire.
https://dronedj.com/2021/10/11/researchers-test-drone-images-neural-computing-to-fight-wildfires/

Airbus says its solar-powered Zephyr HAPS drone set new records during summer tests Bruce Crumley - Oct. 11th 2021

Airbus has announced its Zephyr solar-powered high-altitude platform system (HAPS) drone has completed a barrage of summer tests in Arizona, including what the European aviation consortium described as a record-setting 36 days of flight time spread over a two-day mission.

The trials were carried out at both lower and stratospheric altitudes. One mission set a new, 76,100-foot world record for a solar-powered HAPS drone. The series of six total flights – including two in the stratosphere – focused not only on proving the craft's endurance, but also putting it through a series of tests using an array of onboard applications.

Chief among those was the "Optical Advanced Earth Observation system for Zephyr" payload, which is designed to provide users instant, uninterrupted, and enhanced situational awareness. Airbus said the trials were designed to demonstrate the plane's utility to potential business, government, and defense clients during flights far above restricted airspaces and within those shared with commercial air traffic.

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Airbus said the pair of the stratospheric flights lasted 18 days each, or more than 36 days total – a new record. Those extended Zephyr's previous 887 hours of stratospheric operation to 2,435. https://dronedj.com/2021/10/11/airbus-says-its-solar-powered-zephyr-haps-drone-set-new-records-during-summer-tests/#more-69107

Fish create a perfect love heart in the ocean Ishveena Singh - Oct. 11th 2021

A school of crevalle jack has showcased a mesmerizing display of artistic swimming right off the shores of Juno Beach in Florida. Swimming in perfect synchronization to create a heart-shaped formation, the fish look especially stunning in the glistening turquoise waters.

This beautiful display of aquatic artistry was captured by Palm Beach County resident Paul Dabill who specializes in marine photography. Dabill took his DJI Mavic Air 2 drone out for a spin on October 5 hoping to find mullet.

This time of year is the fall mullet migration. But there were no mullet at the beach this day. However, I found the school of jack crevalle instead. I immediately recognized the heart shape of the school when I first saw it. It maintained that shape for several seconds before morphing into other shapes. It was a special and beautiful moment. https://dronedj.com/2021/10/11/fish-create-love-heart-drone-video/

12Oct21

AUSA 2021: Taekyung looks to break into the US market with Searchlight Drone

11th October 2021 Wilder Alejandro Sanchez in Washington DC

Taekyung Electronics presented its LED Searchlight Drone UAV at the AUSA 2021 exhibition in Washington DC, as the South Korean company hopes to break into the US market.

Speaking to *Shephard* at AUSA, a company representative did not disclose future orders but the UAV is already in use by several **Republic of Korea Army** units, including Army Training & Doctrine Command, Army Headquarters, the Army Intelligence School and the Army Special

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Warfare Command. The platform can be utilized for EO/IR reconnaissance, logistics operations, surveillance patrol, object tracking and warfighting experiments in addition to civilian applications such as search and rescue.

The UAV comes in quadcopter or hexacopter configuration with a weight of 16kg, an operating range of 8km and an altitude of around 150m. Its maximum speed is 40km/h. The system includes a speaker, a 3kg camera, a gimbal system and the LED light, which emits luminous intensity of 18,000lm with a lifetime of 50,000h. https://www.shephardmedia.com/news/air-warfare/ausa-2021-taekyung-looks-to-break-into-the-us-mark/?utm_source=Newsletter&utm_medium=email&utm_content=Today+s+Daily+Defence+News+Alert&utm_campaign=Daily+News+Alert+-+4+Oct+2021+-+%28Inveris+ad%29

Israel a step closer to commercial drones with latest tests JACK JEFFERY Mon, October 11, 2021

A woman looks at drones carrying goods as part of the National Drone Initiative test operation and demonstrated for journalists over Tel Aviv.

TEL AVIV, Israel (AP) — Dozens of drones floated through the skies of Tel Aviv on Monday, ferrying cartons of ice cream and sushi across the city in an experiment that officials hope provided a glimpse of the not-too-distant future.

Israel's National Drone Initiative, a government program, carried out the drill to prepare for a world in which large quantities of commercial deliveries will be made by drones to take pressure off highly congested urban roads. The two-year program aims to apply the capabilities of Israeli drone companies to establish a nationwide network where customers can order goods and have them delivered to pick up spots. The project, now in the third of eight stages, is still in its infancy and faces many questions about security and logistics.

“We had 700 test flights at the start of this year and now we are close to 9,000 flights,” said Daniella Partem, from Israel Innovation Authority, a partner in the drone initiative. Many of the 16 companies participating in the drone initiative have links to the military. https://news.yahoo.com/israel-step-closer-commercial-drones-192040380.html?fr=sycsrp_catchall

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Rocket Lab to launch NASA smallsat using SBIR award Jeff Foust — October 11, 2021

WASHINGTON — Rocket Lab will launch a NASA technology demonstration satellite under an unconventional arrangement as the agency works on a more standardized approach for launching smallsats.

Rocket Lab announced Oct. 6 that NASA selected the company to launch the Advanced Composite Solar Sail System (ACS3) spacecraft on an Electron rocket. The 12-unit cubesat will test the deployment of a solar sail using composite booms seven meters long. Those booms, which will unspool over the course of 20 to 30 minutes, are designed to be lighter that traditional metallic booms while also being less susceptible to thermal distortion.

ACS3 will be part of an Electron rideshare mission launching in mid-2022 from New Zealand. The rocket's kick stage will deploy other, unnamed payloads first, then raise its orbit to deploy ACS3 in its higher orbit.

Rocket Lab's release did not disclose the value of the contract in the release, issued shortly after markets closed, but the company's shares soared in after-hours trading and closed up 10% in trading Oct. 7. A NASA spokesperson said late Oct. 7 that the contract was valued at $1.092 million. https://spacenews.com/rocket-lab-to-launch-nasa-smallsat-using-sbir-award/

Drone Photo Award winners capture a dizzyingly fantastic view of the world

October 9, 2021 SUZETTE LOHMEYER, Sujon Adhikary

Women collect water from a dry riverbed in Khulna, Bangladesh. This photo was one of the "highly commended" images from this year's Drone Photo Contest.

What does our planet look like from the sky?

The winning images of this year's Drone Photo Awards capture a dizzyingly fantastic view of the world. From high above, a field of bright green grass in Vietnam looks like faux fur – and a frozen reservoir in Kazakhstan resembles shards of broken glass.

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The awards, in their fourth year, received entries from 105 countries and 2,900 professional and amateur photographers, says Luca Venturi, contest founder and art director of Siena Awards, a group based in Siena, Italy, that organizes international photo competitions.

The availability of cheaper and better drones over the past few years have helped popularize this style, especially among amateurs, says Ken Geiger, a Pulitzer Prize-winning photographer and one of this year's judges for the awards. The contest is open to all kinds of aerial photography, not just taken with drones but also blimps, kites, parachutes, helicopters and even hot air balloons.

Here's a selection of contest winners and honorable mentions around the world, including the lower income countries that Goats & Soda covers. There's photorealism — and also staged scenes that capture the pandemic times we're living in.
https://www.npr.org/sections/goatsandsoda/2021/10/09/1041867593/drone-photo-award-winners-capture-a-dizzyingly-fantastic-view-of-the-world

New Blue sUAS 2.0: 11 Vendors Named for Project to Prototype a New Approval Process

Miriam McNabb October 10, 2021 by DRONELIFE Staff Writer Ian M. Crosby

The Department of Defense (DoD) has named 11 vendors to the new Blue sUAS 2.0 list – a pilot project designed to streamline the approval process for drone technology to become “government approved.”

The move is designed to enlarge the list of compliant aircraft available to government agencies, some of whom have complained that the only 5 aircraft listed on the original Blue sUAS list didn’t meet their applications: GSA and DoD have argued that the security of drone platforms must be a primary concern.

The Defense Innovation Unit (DIU) has formed a partnership with the Office of the Under Secretary of Defense for Acquisition & Sustainment and the U.S. Army Corps of Engineers for the Blue sUAS 2.0 project, which focuses on reducing administrative barriers for onboarding policy compliant, commercial small unmanned aircraft systems into the Department of Defense. DIU has made agreements with 11 non-traditional vendors for participation in this pilot program to prototype a new approval process while markedly improving the variety of capabilities available to all branches of the U.S. military.

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On September 8, 2021, guidance signed by the Deputy Secretary of Defense established a policy allowing all Services to more effectively utilize the technological advancements of the commercial sUAS market.

The 11 new Blue sUAS 2.0 vendors are: Ascent AeroSystems, BlueHalo LLC, Easy Aerial Inc., FlightWave Aerospace Systems Corporation, Freefly Systems East, Harris Aerial, Inspired Flight Technologies Inc., senseFly Inc, Skydio, Inc., Vision Aerial, and Wingtra AG. https://dronelife.com/2021/10/10/new-blue-suas-2-0-11-vendors-named-for-project-to-prototype-a-new-approval-process/

This 21-year-old drone tech CEO just raised $25 million in funding Ishveena Singh - Oct. 12th 2021

A tragic moment led to the invention of BRINC Drones: the 2017 mass shooting at The Mandalay Bay resort in the company's hometown of Las Vegas. As first responders risked their lives to engage in a physical search of the hotel tower, a 17-year-old boy wondered why a drone – that could fly and communicate inside the building – wasn't being used to serve as the crew's eyes and ears. Now 21, Blake Resnick has just raised $25 million in Series A funding to accelerate his mission to keep people safe in dangerous situations.

The financing round was led by Index Ventures with participation from Sam Altman, Tusk Venture Partners, Jeff Weiner's Next Play Ventures, Dylan Field, Elad Gil, Patrick Spence, Alex Wang, and former Acting Secretary of Defense, Patrick Shanahan. It's worth noting that BRINC Drones previously raised $2.25 million in a seed round led by Sam Altman, CEO of OpenAI.

Resnick has spent the last three years calling out with Las Vegas Metro Police Department SWAT, so he can experience their challenges in the field. The lessons learned on the field have inspired the development of BRINC's first breakthrough system: the LEMUR – a drone that can flip itself over and relaunch if, somehow, it ends up on its back.

The company began selling these systems in early 2021. Today, BRINC Drones is home to a diverse team of more than 50 engineers, technicians, technologists, and public safety specialists. It has also partnered with a leading public safety and crisis responder advocacy group, DRONERESPONDERS. https://dronedj.com/2021/10/12/brinc-drones-series-a-funding/#more-69206

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Autonomous drones can now zip through the woods at insane speeds Ishveena Singh - Oct. 12th 2021

Thanks to artificial intelligence, drones can now fly autonomously at remarkably high speeds, while navigating unpredictable, complex obstacles using only their onboard sensing and computation.

In a new study, researchers at the University of Zurich have trained an autonomous quadrotor to fly through previously unseen environments – such as forests, buildings, ruins, and trains – keeping speeds of up to 40 km/h and without crashing into trees, walls, or other obstacles.

This feat was achieved by getting the drone's neural network to learn flying by watching a sort of "simulated expert" – an algorithm that flew a computer-generated drone through a simulated environment full of complex obstacles. Now, this "expert" could not be used outside of simulation, but its data was used to teach the neural network how to predict the best trajectory, based only on the data from the sensors.

The research team says that this approach offers a significant advantage over existing systems, which first use sensor data to create a map of the environment and then plan trajectories within the map – two steps that require time and make it impossible to fly at high speeds.
https://dronedj.com/2021/10/12/autonomous-drones-insane-speeds/

Experts: Unmanned Air Travel Is Close to Becoming a Reality October 08, 2021 Lisa Vernon Sparks, Daily Press, Jonathon Gruenke/Daily Press

The Association for Unmanned Vehicle Systems International and Longbow Group hosted an event to showcase how drone technology — such as air taxis and other unmanned cargo transport — can be incorporated into society.

An Advanced Aircraft Company hybrid advanced multi-rotor small unmanned aircraft system flies above the ground of Fort Monroe during the Association for Unmanned Vehicle Systems International Hampton Roads chapter demonstration day Wednesday afternoon October 6, 2021.

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(TNS) —A few local aerial tech entrepreneurs demoed their crafts Wednesday to a few dozen spectators. The program was hosted by the local chapter of the Association for Unmanned Vehicle Systems International and the aviation firm Longbow Group. The companies showed off their drones at Longbow's test center at Fort Monroe, including those capable of mapping, surveying, underwater surveillance, and robotics.

Advance Aircraft's drone is a hybrid fueled by gasoline to fly far distances, but only ascended several hundred feet. The technology for out of sight activities, such as autonomous search and rescues, is being perfected now.

In May, Longbow announced a partnership with NASA Langley Research Center to develop unmanned aerial flight paths between Langley's campus and its Fort Monroe location that would help drones navigate air space when sharing with other aircraft. The company wants to obtain necessary approvals from the Federal Aviation Administration to fly drones beyond current parameters for small unmanned aircraft. https://www.govtech.com/products/experts-unmanned-air-travel-is-close-to-becoming-a-reality

13Oct21

Toronto hospitals, Quebec company behind world's first delivery of lungs by drone

Tara Deschamps The Canadian Press Tue., Oct. 12, 2021

TORONTO - Dr. Shaf Keshavjee was full of nerves as he scanned Toronto's darkened skyline, craning his neck to spot a drone whizzing toward the downtown rooftop he was standing on.

The drone was only making a short journey — about six minutes — from Toronto Western Hospital to Toronto General Hospital, but the University Health Network's surgeon-in-chief knew its cargo would make the trip historic and time was of the essence.

Nestled inside a lightweight, carbon fiber container and suspended from a Unither Bioélectronique drone was a set of lungs destined for Keshavjee's patient, a male engineer to be operated on that last Saturday in September.

"To see it come over the tall buildings was a very exciting moment," Keshavjee recalled. "I certainly did breathe a sigh of relief, when it landed, and I was able to...see that everything was OK." He and Bromont, Que. bioengineering firm Unither Bioélectronique believe the trip was

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the first time lungs have taken flight using an unmanned drone, but they are convinced the method will become the norm as a race to get organs in the sky heats up.

The first to complete the feat was the University of Maryland Medical Center in Baltimore, when a drone-delivered kidney was transplanted in 2019. Since then, MissionGo and Nevada Donor Network sent corneas on a five-minute flight and a kidney on a 25-minute journey and in May, a pancreas took to Minnesota's skies.
https://www.thestar.com/business/2021/10/12/toronto-hospitals-quebec-company-behind-worlds-first-delivery-of-lungs-by-drone.html

Exosonic Developing Supersonic UAS Concept for USAF Steve Trimble October 12, 2021

Los Angeles-based startup Exosonic will develop a concept for a purpose-built, supersonic unmanned aircraft system under a 15-month, $750,000 U.S. Air Force contract, the company announced Oct. 12.

If a follow-on contract is signed to launch development, the unnamed UAS could serve a military role in adversary air training as well as help Exosonic continue development of a low-boom supersonic transport for the commercial and defense markets.

"The supersonic UAS work is critical to our company's strategy due to how much we'll learn about designing, manufacturing, and maintaining supersonic airplanes with our first UAV products," Exosonic CEO Norris Tie says. Offering the UAS as a service to the Air Force would also generate a revenue stream, with any proceeds able to be reinvested in development of the supersonic transport.

The company has targeted late 2023 or early 2024 for first flight of the military UAS, an Exosonic spokeswoman says. Exosonic plans to select a commercial off-the-shelf engine for the supersonic UAS and design the airframe around it, she adds. https://aviationweek.com/shows-events/ausa-2020/exosonic-developing-supersonic-uas-concept-usaf

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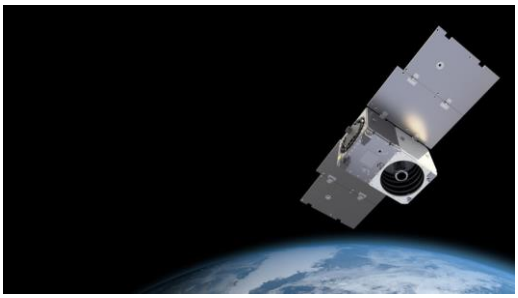
Planet Labs, soon to be public, unveils more powerful Pelican imagery satellites

OCT 12 2021 Michael Sheetz



Earth imaging and data specialist Planet Labs on Tuesday announced a new line of imagery satellites, called Pelican, as the company prepares to go public later this year. The Pelican satellites are meant to upgrade Planet's existing constellation of 21 SkySat satellites in orbit, with launches beginning in 2022. "It's higher resolution and having more satellites in space means that you actually end up having a higher revisit capability, and [Pelican is] being designed for what our users want – speed and near-real time understanding about what's happening," Planet co-founder and chief strategy officer Robbie Schingler told CNBC. With a mass between 150 to 200 kilograms each, the satellites are substantially larger than the 120 Dove series of imagery satellites that Planet also has in orbit.

The company in August signed a multi-year launch agreement with SpaceX through 2025. Planet has more than 600 customers in four sectors: civil, agriculture, defense and intelligence, and mapping.

Notably, Planet is combining with special purpose acquisition company dMY Technology Group IV, which trades on the NYSE under ticker DMYQ. The deal gives the space company a $2.8 billion equity valuation and is expected to close in the fourth quarter, resulting in Planet listing on the NYSE under ticker PL. https://www.cnbc.com/2021/10/12/planet-labs-unveils-more-powerful-pelican-imagery-satellites.html

It flies: Volocopter drone takes off in public for the first time Ishveena Singh - Oct. 13th 2021

Germany-based urban air mobility solutions company Volocopter has successfully completed the first public flight demonstration of its electric heavy-lift drone, VoloDrone. The three-minute test flight was planned in collaboration with logistics company DB Schenker to showcase how delivery drones can be integrated into the logistics supply chain for end-to-end cargo transport.

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The VoloDrone is an uncrewed, fully electric utility drone designed to carry any of the six International Organization for Standardization pallet sizes, weighing up to 200 kilograms, over a 40-kilometer range. Its first public flight was conducted on Tuesday at the ITS World Congress event in Hamburg. The flight took off shortly after 3 p.m. and reached a maximum altitude of 22 meters. It was equipped with a Euro-pallet-size load box in between its landing gear.

The aircraft brought the payload to a DB Schenker Cargo Bike and landed safely. Once the payload was transferred successfully, the Cargo Bike delivered its cargo to the final destination under the area's park deck, marking the completion of the entirely electric, multimodal last-mile delivery. https://dronedj.com/2021/10/13/volocopter-volodrone-drone-public-flight/

Applied Aeronautics Announces New Albatross BVLOS Aircraft with DAA Solution October 10, 2021 News

Applied Aeronautics announces its latest Albatross UAV aircraft fully integrating Iris Automation's advanced detect and avoid (DAA) Casia solution for BVLOS flights. The Albatross UAV starts at $7,000, and the forthcoming BVLOS model will remain consistent with Applied Aeronautics commitment to marrying a robust feature set with affordable pricing.

Applied Aeronautics will manufacture the Albatross BVLOS at its new composites facility in Austin, Texas. The facility is being built out to support a surge in demand from the global commercial and military sectors for affordable, long-endurance, BVLOS solutions.

Iris Automation's Casia, also produced in the US, allows uncrewed aircraft to see and react to the aviation environment around it, providing situational awareness for remote pilots and enhancing air safety. Casia detects other aircraft using computer-vision algorithms to classify them, makes intelligent decisions about the threat they may pose to the drone and then triggers an alert to execute maneuvers to safely avoid collisions.

https://uasweekly.com/2021/10/10/applied-aeronautics-announces-new-albatross-bvlos-aircraft-integrated-with-iris-automations-casia-daa-solution/?utm_source=rss&utm_medium=rss&utm_campaign=applied-aeronautics-announces-new-albatross-bvlos-aircraft-integrated-with-iris-automations-casia-daa-solution&utm_term=2021-10-13

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V-BAT Takes Flight with 11th Marine Expeditionary Unit aboard USS Portland

October 10, 2021 Military

Shield AI, the defense-technology company using self-driving software to enable collaborative teams of robots to operate in GPS and RF denied environments, today announced that its company, Martin UAV, has successfully flown its V-BAT Unmanned Aircraft System on numerous missions with the 11th Marine Expeditionary Unit aboard USS Portland, including a flight where the V-BAT crew demonstrated the aircraft's Automatic Identification System capability by using the system to successfully link sensor to target in less than three minutes.

The V-BAT UAS provides a reconnaissance, surveillance, and target acquisition capability for the Navy and Marine Corps in an environment where space is at a premium. Aboard USS Portland, the unmanned aircraft performed and proved durable in high winds and challenging weather conditions.

The V-BAT, with its, near-zero footprint vertical take-off and landing and long-endurance capabilities, is unlike any UAS on the market. Propelled by a single, ducted, thrust-vectored fan, it takes off and lands in the style of a SpaceX rocket. Its logistics footprint fits into the bed of a pickup truck or inside a Blackhawk helicopter.

The Martin UAV (a Shield AI company) V-BAT series aircraft is the only single-engine ducted fan VTOL that can launch and recover from a hover, fly up to 11 hours in horizontal flight, and make mid-flight transitions to "hover and stare" at any time throughout a given mission set.
https://uasweekly.com/2021/10/10/v-bat-takes-flight-with-11th-marine-expeditionary-unit-aboard-uss-portland/?utm_source=rss&utm_medium=rss&utm_campaign=v-bat-takes-flight-with-11th-marine-expeditionary-unit-aboard-uss-portland&utm_term=2021-10-14

15Oct21

Forget drones: Zipline says success comes from serving human needs Bruce Crumley - Oct. 14th 2021 DRONES FOR GOOD ZIP LINE MEDICAL

There haven't been many companies that have embodied the concept of "drones for good" as compellingly as medical delivery specialist Zipline. Yet despite being one of the brightest stars in global UAV activity, the company is again offering a reminder of why it succeeds: It forgets about the drones and focuses on the service.

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In a Wednesday interview with Bloomberg Live, Zipline cofounder and CEO Keller Rinaudo stated Zipline is not a drone company.

"I think that's probably the biggest misconception about what we do," he told Bloomberg TV. "Sometimes people look at Zipline and see the drone. But the reality is none of the partners that Zipline works with – whether it's partners in health, or the government of Rwanda, or the government of Ghana, or health systems across the US – really want or care about drones. What they care about is being able to make sure a medical product goes from point A to point B fast enough to save somebody's life."

"Our goal from day one, when we founded the company, was to build an instant logistics system for medicine – to basically approximate teleportation in terms of enabling health systems to send exactly what's needed, where it's needed, when it's needed," he said. "We launched in Rwanda in 2016, and originally we were focused on delivering blood products. Today we deliver about 250 medical products – essentially the entire medical health care supply chain using instant, autonomous, electric vehicles that weigh about 50 lbs., to deliver something to any hospital or primary care facility when something's needed."

That was not the first time Zipline officials minimized the customary fascination with its drones. That focus may be understandable in a quickly diversifying and developing sector drawing billions of new investment each year – and with even Zipline reeling in $250 million in expansion funding last July. https://dronedj.com/2021/10/14/forget-drones-zipline-says-success-comes-from-serving-human-needs/

Drone Delivery: Wingcopter Gets Strategic Investment Miriam McNabb October 14, 2021

Expa, -a global network of startup founders led by Uber co-founder Garret Camp, has announced a strategic investment in Wingcopter.

Drone delivery investment is growing, and German company Wingcopter "not only develops and manufactures autonomous delivery drones but also operates drone-delivery-as-a-service. Whether deploying vital supplies, life-saving medicine, parcels, or spare parts—the sky is Wingcopter's highway," says a press release.

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Expa backs “category champions” – and in drone delivery, Wingcopter has emerged as an industry leader. “Wingcopter is ideally positioned to capitalize on this momentum thanks to its cutting-edge delivery drone, software and services,” said Garrett Camp, Founder, Expa. “Given the team’s track record and impressive technology, Wingcopter will have a deep impact on supply chain transformation, logistics and on-demand delivery.”

Wingcopter is set to make an impact in the U.S., partnering with America’s largest air medical service provider Air Methods to set up a drone-based medical delivery network for thousands of hospitals all over the United States. In Japan, Wingcopter collaborates with ANA Holdings Inc., parent company of Japan’s biggest airline All Nippon Airways. ANA aims to build a drone delivery network to help improve quality of life in rural areas across the whole country.
https://dronelife.com/2021/10/14/drone-delivery-investment-wingcopter-gets-strategic-investment/

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