UAS and SmallSat Weekly News

Contents

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

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Flirtey to certify and expand production of the Flirtey Eagle drone delivery system March 4, 2021 News

Flirtey today announced it has completed the technology to certify and expand U.S. production of its best-in-class drone delivery system for last-mile delivery. Flirtey's technology enables small and large businesses to operate their own logistics by providing store-to-door drone delivery to their customers, and Flirtey is now taking pre-orders.

Flirtey's advanced technology development was led by the head of NASA's program to fly drones over people, and first unveiled at The National Press Club in Washington, D.C. Flirtey now has more than 1,000 patent claims across a portfolio of granted and provisional patents, and has conducted more than 6,000 flights to date. With a safety-first approach, the company implemented a parachute system that can safely deploy from the delivery altitude; the aircraft lowers packages on a tether, enabling safe and precise drone delivery to homes and businesses. This marks completion of the Flirtey Eagle drone delivery system for FAA Type Certification.

The Company previously raised approximately $15 million in its Series B Preferred Stock financing, which valued the company at approximately $100 million. https://uasweekly.com/2021/03/04/flirtey-to-certify-and-expand-production-of-the-flirtey-eagle-drone-delivery-system/?utm_source=rss&utm_medium=rss&utm_campaign=flirtey-to-certify-and-expand-production-of-the-flirtey-eagle-drone-delivery-system&utm_term=2021-03-05

Air Force Looks to Hybrid Electric Solution for eVTOL and UAS Energy Concerns Kelsey Reichmann March 4, 2021

The Air Force is investing in LiquidPiston's X-Engine technology to create a hybrid-electric propulsion system to power emerging technologies like unmanned aircraft systems and orbs, the company announced on March 4.

The Small Business Technology Transfer contract worth $150,000 was awarded through AFWERX to support Agility Prime, a program developing electric vertical take-off and landing (eVTOL) aircraft for commercial and military use.

Robert Rea | Axcel Innovation | Charlottesville and Portsmouth, VA
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The X-Engine technology would use fuel to power a generator and charge the aircraft's batteries extending its flight time and range, according to the company.

The X-Engine runs on JP-8, diesel, and other heavy fuels but is 30 percent more fuel-efficient than a diesel engine, according to LiquidPiston. It is also five to 10 times smaller and lighter than a diesel engine and is two to four times more fuel-efficient than a small turbine. https://www.aviationtoday.com/2021/03/04/air-force-looks-hybrid-electric-solution-evtol-uas-energy-concerns/

Comet Resources to use drones to find high-grade copper Josh Spires Mar. 5th 2021

Australian-listed Comet Resources has turned to drones to find high-grade copper at its Barraba Copper Project in northern New South Wales, Australia. Comet Resources has tasked drone service Airborne Geo Exploration (AirGeoX) with the job.

It will create a high-definition airborne magnetic survey to detect the differences in the Earth's magnetic field, which results in different materials being in the ground below. AirGeoX uses its AirGeoX GX9 heavy lift drone with a maximum weight of 17 kg. A highly-sensitive cesium vapor magnetometer is towed by the drone using a rope to keep it away from the drone and magnetic interference.

Since the drone can survey a large area of land from a low altitude means high-resolution data for a large area can be captured in a short amount of time, resulting in more consistent measurements. Using a drone also removes the danger of flying an aircraft low to the ground and allows the measurements to hug the terrain rather than fly horizontally. https://dronedj.com/2021/03/05/comet-resources-to-use-drones-to-find-high-grade-copper/#more-51681

Flirtey begins taking pre-orders, ramps up production Josh Spires Mar. 5th 2021

Drone delivery company Flirtey has begun taking pre-orders for its delivery drones after completing the certification process. The company has also ramped up its production efforts at its Reno, Nevada-based facility to cope with demand for its drones.

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Flirtey plans on licensing its technology to other companies that want to develop their own drone delivery services, rather than just focusing on creating its own network. The drones are expected to deliver everything from groceries to medicine.

The company's Eagle delivery drone was released in 2019 and is designed to fly in 95% of weather conditions and fit 75% of its compartment packages. Like Wing Aviation's design, the Flirtey Eagle also uses a tether to lower the drop-off location package.

The Eagle is flown using a custom-made autonomous software platform that the FAA has given the go-ahead as the first multi-drone delivery system to be approved in the US. Flirtey Portal is the company's portable and safe drone launch station. It can go into a trailer and fit into a parking spot, allowing companies to move it as required. https://dronedj.com/2021/03/05/flirtey-begins-taking-pre-orders-ramps-up-production/#more-51657

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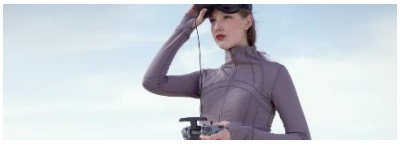
DJI FPV DRONE IS HERE: EVERYTHING YOU NEED TO KNOW March 2, 2021 Sally French News



DJI today announced DJI FPV, a drone designed for racing, and it can fly at nearly 90 mph.

FPV is short for first person view, meaning that the drone is operated by looking directly through the camera's video feed for spatial awareness, rather than looking at the drone as it flies in the sky. The style of flight is most common in the flashy world of drone racing, where drones shot via FPV are able to capture a unique, cinematic look of wild, lightning-fast flights between narrow alleys, through windows and whipping around race tracks.

With DJI FPV, you're getting a drone designed for drone racing that's ready to fly right out of the box. It can reach maximum speeds of 87 mph, at a maximum acceleration of 0-62 mph in just two seconds. DJI FPV goes on sale today starting at $1,299. https://www.thedronegirl.com/2021/03/02/dji-fpv-drone-is-here-everything-you-need-to-know/

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

US Navy Demonstrates Unmanned Transport Cargo Over Naval Air Station Norfolk Naval News Staff 01 Mar 2021

Naval Air Force Atlantic conducted a test of a logistics Unmanned Air System prototype over Naval Station Norfolk on Feb. 21, 2021.

The long-range cargo transport, dubbed Blue Water UAS, is designed to operate with Naval Forces that typically operate in heavy winds over open water and require aircraft to land on pitching vessels at sea.

The proof-of-concept test was successfully conducted by transporting light-weight logistical equipment from the Mid Atlantic Regional Maintenance Center, Naval Station Norfolk on board USS Gerald R. Ford while the Ford-class aircraft carrier was in-port.

Historic data from Navy casualty reports show that warships that move to non-mission capable or partially mission capable status often do so due to logistics issues like the need for electronic parts, 90 percent of which are logistical deliveries weighing less than 50 pounds. Currently, aircraft like the MH-60 helicopters and MV-22 tilt-rotor aircraft fly these missions. Blue Water presents an opportunity to cut the cost and inefficiency of these flights.
https://www.navalnews.com/naval-news/2021/03/us-navy-demonstrates-long-range-unmanned-transport-cargo-over-naval-air-station-norfolk/

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FAA Certifies General Atomics Extended Range Drone for Testing in US Airspace

Nichols Martin March 4, 2021 News, Technology

The company said Wednesday it will use the FAA-granted experimental certificate to expand Avenger ER's testing activities for internal research and development as well as contracted efforts. The new Avenger ER features a 76-foot wingspan that allows the aircraft to fly for more than 20 hours.

Avenger aircraft feature avionics systems based on those used by the MQ-9 Reaper UAS and can operate with the Lynx all-weather radar and infrared-based sensors for intelligence, surveillance and reconnaissance activities. General Atomics can also equip the drone with a Joint Direct Attack Munition for offensive situations that require precision strikes.

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GA-ASI has also reached 30,000 hours of flight with the Avenger aircraft fleet across various research and testing programs. https://blog.executivebiz.com/2021/03/faa-certifies-general-atomics-made-extended-range-drone-for-testing-in-us-airspace/

Industrial Drone Solution Provider Clobotics Raises $30 Million Miriam McNabb March 05, 2021

Seattle, Shanghai and Denmark based technology platform Clobotics has announced a $30MM capital raise.

Clobotics uses computer vision technology to help customers in wind turbine inspection through the use of drones. The investment round was led by Sanxia Xintai, a leading growth fund in China specializing in technology-driven companies. Other co-investors include existing shareholders as well as two more new investors.

Clobotics is not a drone company, but may indicate a future trajectory of the industry. The company has applied their computer vision technology to the automated drone inspection of wind turbines: a critical industrial application that offers a significant return on investment for energy companies. Clobotics offers a customized drones for autonomous visual inspection of wind turbine blades, as well as a back end system for analyzing images to understand blade conditions and generate reports and recommendations for customers. To date, the company reports that it has inspected over 14,000 wind turbines around the world for global brands including Goldwind, Vestas and GE Renewable Energy.
https://dronelife.com/2021/03/05/industrial-drone-solution-provider-clobotics-raises-30-million/

NASA extends deadline for Advanced Air Mobility national campaign March 8, 2021 Philip Butterworth-Hayes UAS traffic management tenders

NASA has extended the proposal date of the Advanced Air Mobility National Campaign by three weeks to April 2, 2021.

NASA's Aeronautics Research Mission Directorate is seeking partners that will focus on demonstrating integrated AAM operations in flight and simulation activities to be conducted as part of the first AAM National Campaign planned for 2021 and 2022. NASA is currently seeking AAM vehicle developers that propose to fly as part of flight activities in 2022.

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NASA Aeronautics Research Mission Directorate plans to host an Advanced Air Mobility National Campaign series with a goal to promote public confidence and accelerate the realization of emerging aviation markets for passenger and cargo transportation in urban, suburban, rural and regional environments. NASA plans to host the first National Campaign in Calendar Year 2022 that will enable participants to demonstrate integrated operations in relevant scenarios that include: two-way network flight plan communications; beyond visual line of sight operations; real and simulated vehicle and operations contingencies; dynamic traffic avoidance and trajectory management; and approach and landing in the presence of structures and associated mechanical turbulence. https://www.unmannedairspace.info/uas-traffic-management-tenders/nasa-extends-deadline-for-aam-national-campaign-platform-infrastructure-and-simulator-industry-partners/

AATI Completes Successful BVLOS UAS Pipeline Patrol Operation for NASA March 8, 2021 News

American Aerospace Technology Inc's AiRanger™ (formerly the Resolute Eagle) unmanned aircraft system successfully completed a demonstration flight on February 25 in the San Joaquin Valley as part of NASA's Systems Integration and Operationalization activities. The objective of the demonstration was to enable routine commercial UAS operations in the National Air System, including development, integration and certification of UAS for safe operation with manned and unmanned aircraft traffic in the NAS. Target applications are focused on critical infrastructure missions including beyond visual line-of-sight patrols over pipelines, rail, road, and agricultural environments using multispectral sensors with integrated machine learning and communications. The operation was conducted in support of the goal to "work toward commercial UAS operations in the NAS."

On display was the AATI-developed Detect and Avoid system that enables AiRanger to fly safely in civil airspace alongside manned aircraft. The system consists of dual airborne RADAR, ADS-B, tail and wing cameras mounted on the UAS. The system's collision-avoidance radar provides an essential safety feature for integrating unmanned aircraft into civil airspace. The system included an integrated Sagetech MXS ADS-B In/Out Transponder and ACAS-based DAA components. https://uasweekly.com/2021/03/08/aati-completes-successful-bvlos-uas-pipeline-patrol-operation-in-the-san-joaquin-valley-for-nasa/?utm_source=rss&utm_medium=rss&utm_campaign=aati-completes-successful-bvlos-uas-pipeline-patrol-operation-in-the-san-joaquin-valley-for-nasa&utm_term=2021-03-08

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Drones are protecting crops from hungry moths Josh Spires Mar. 8th 2021

A cress grower from the Netherlands has turned to drones to protect crops from the moths and caterpillars that munch away at them. The greenhouse grower has enlisted PATS Indoor Drone Solutions' help to get the high-tech security team in the air.

The drone system uses an array of cameras placed in the greenhouse backed by algorithms that can detect the moths flying. A drone is then told where the moth is, and it attacks. Flying into the moth and killing it almost instantly. Rob Baan shared that he has chosen to use the drone as he doesn't want to use chemicals on his plants.

The cameras are also able to see the differences between different insects flying around in the greenhouse. *"You don't want to kill a ladybug because a ladybug is very helpful against aphids."*

While the technology is still in its early stages, the results so far are impressive and will result in widespread adoption within the Netherlands and eventually the world. The system still requires many drones to ensure each moth is killed. *"It's still a development product, but we are taking out moths every night in an autonomous way without human intervention. I think that's a good step forward."* https://dronedj.com/2021/03/08/drones-are-protecting-crops-from-hungry-moths/

International Women's Day: More #WomenInDrones every year Scott Simmie Mar. 8th 2021

The hashtag is intended to highlight women working or involved with the field – and encourage others to consider entering what is a male-dominated sector. What better day than International Women's Day to support this ongoing initiative?

Skydio is a rapidly growing company. But it's not so focused on product that it forgets about its people. Recently, Skydio encoudaged its female employees to get their Part 107 licenses, and It held the "Skydio Women Take Flight Day. The event was held in honor of Women's History Month to commemorate and encourage the study of aviation and the vital role of women in American history," explains Nicole Bonk, head of flight testing at Skydio. "So 24 of us went out, we brought our Skydio 2 drones, and we all just took off and flew. It's part of the efforts to help bridge the gender gap and help with diversity."

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Skydio's Nicole Bonk holds up a Skydio 2 drone. Part of her job as head of Flight Testing is as the instructor with Skydio's Flight School. She hosts a whole series of videos, from the basics of getting your Skydio drone in the air to more advanced operations.

https://dronedj.com/2021/03/08/international-womens-day-more-womenindrones-every-year/#more-51802

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New 'drone pilot co-operative' to drive professionalism in UAV industry HEADLINE NEWS JOE PESKETT MARCH 8, 2021

Iprosurv has launched Pilot Partnerships, a new proposition to bring together the nation's independent operators and drive greater levels of professionalism across the sector.

Billed as a co-operative for commercial drone pilots, Pilot Partnerships aims to bring together the huge number of independent operators to provide mutual support, share best practice and work together to drive greater levels of professionalism and public trust in the sector.

Using Iprosurv's proprietary software platform, members of Pilot Partnerships will have access to case management and flight planning software, data security, safety and environmental compliance support, tailored training, bespoke websites and a host of marketing and client prospecting support.

Rebecca Jones, CEO and co-founder of Iprosurv, said: "The commercial drone industry is growing fast as more and more businesses look to new technology to solve old problems.

"But the commercial drone market is fragmented and made up of sole traders and micro-SMEs, and the introduction of new regulations has made life tough for many. If we are to become the mature, professional industry that more and more sectors expect us to be, we must come together, work together and grow together to create that."
https://www.commercialdroneprofessional.com/new-drone-pilot-co-operative-to-drive-professionalism-in-uav-industry/

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CHOCTAW NATION TO TEST DRONE DELIVERY THROUGH FAA DEAL March 9, 2021 Sally French News

The Federal Aviation Administration this week announced a partnership with the Native American indigenous tribe that will study how drones can best transport cargo, including parcels, at lower altitudes.

The Choctaw Nation, which covers nearly 7 million acres and occupies part of southeastern Oklahoma is the third-largest federally recognized tribe in the U.S., and the second-largest reservation in area after the Navajo.

The FAA partnership is set to last at least three years under a Memorandum of Understanding and will enable the FAA's Mike Monroney Aeronautical Center to work with the Choctaw Nation to study human factors, supply chain management and air traffic control.

Besides actually studying drone delivery, the partnership is expected to promote interest in STEM programs for students seeking careers in drones or the broader aerospace field. Already more than 6,300 employees, contractors and students work at the FAA's aeronautical center, which is located on the west side of Will Rogers World Airport in Oklahoma City.

"The MMAC plays a critical role in ensuring the safety of aviation operations in our nation, and we are excited to establish formal ties between our organizations to jointly support the development and safe integration of emerging aviation technologies into our national airspace system," said James L Grimsley, Executive Director of Advanced Technology Initiatives with the Choctaw Nation of Oklahoma. https://www.thedronegirl.com/2021/03/09/choctaw-nation-test-drone-delivery-faa/

STABLE Develops Stabilized Drone Launch & Landing Platforms 02 Mar 2021 Mike Ball

STABLE, a leading developer of innovative stabilized launch and landing platforms for UAVs and drones, has partnered with Unmanned Systems Technology to demonstrate their expertise in this field. The 'Silver' profile highlights how their gyro-stabilized platforms provide a perfectly horizontal launch and landing surface for drones operating in highly demanding and dynamic

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

maritime and offshore environments and also allow unmanned aircraft to land on moving ground vehicles.

STABLE's drone take-off and landing stations are fully customizable and can be adapted to UAVs of all sizes and to a wide range of military, commercial and industrial operational requirements. The lightweight platforms are fully electric, consume limited power, may run on 12V or 24V, and are manufactured for offshore & marine environments. https://www.unmannedsystemstechnology.com/2021/03/stable-develops-stabilized-drone-launch-landing-platforms/?utm_source=UST+eBrief&utm_campaign=0603a1774e-eBrief_2021_9Mar&utm_medium=email&utm_term=0_6fc3c01e8d-0603a1774e-119747501

Drones will provide rural Wisconsin kids with reliable internet Josh Spires Mar. 9th 2021

A Wisconsin drone company has partnered with the local school district to provide reliable internet to rural Northwoods kids. The drones will essentially act as mobile cellular towers to give the kids access to the internet for schoolwork.

Telelift is working with the Northland Pines School District to give children within the district access to a reliable internet connection. Fifteen percent, or 1,340 students, currently have no access to the internet at home, with around half of the population having access to unreliable connections.

The drone used by the company is tethered, allowing it to stay in the air for up to 42 days at a time. A network of drones will be sent into the air, essentially creating a mesh of internet that gets sent from one drone to the next until it reaches the child's house.

Looking past the pandemic, the drones will allow students forced to stay home during snow days to have access to their schoolwork still and attend classes virtually. Testing is expected to start this month and will first be used in the evenings to ensure the students can access the school's VPN. https://dronedj.com/2021/03/09/drones-will-provide-rural-wisconsin-kids-with-reliable-internet/

AeroVironment Subsidiary Wins SOCOM UAS Task Order Brenda Marie Rivers March 10, 2021 News, Technology

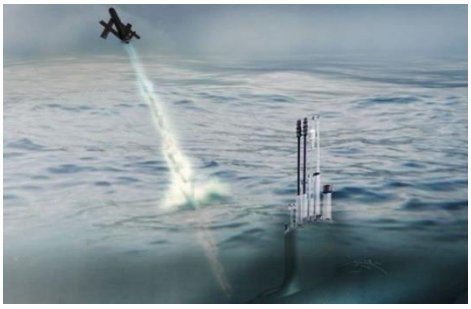
An AeroVironment subsidiary has won a one-year, $7 million task order to provide unmanned aerial system-based intelligence, surveillance and reconnaissance services to U.S. Special Operations Command.

SOCOM awarded the task order to Arcturus UAV under the potential $975 million Mid-Endurance UAS IV indefinite-delivery/indefinite-quantity contract awarded in June 2020, AeroVironment said Tuesday.

AeroVironment closed its $405 million acquisition of Arcturus last month and obtained access to the latter's Jump 20 vertical takeoff and landing platform through the deal. The Jump 20 UAS participated in the U.S. Army's Future Tactical UAS demonstration event held from February 22 to March 5 at Fort Benning in Georgia.

Rick Pedigo, vice president of global sales and business development at AeroVironment, said the fixed-wing system is runway independent and designed to also host multiple payloads.
https://blog.executivebiz.com/2021/03/aerovironment-subsidiary-wins-socom-uas-task-order/?utm_campaign=ExecutiveBiz%20Daily%20Headlines%2003.10.2021%20%28Sz7cKK%29&utm_medium=email&utm_source=Ebiz%20Welcome%20Email&_ke=eyJrbF9jb21wYW55X2lkIjogIlRCS0t4UCIsICJrbF9lbWFpbCI6ICJyb2JlcnQucmVhQGF4Y2VsLnVzIn0%3D

U.S. Navy to award contract for submarine-launched drones Sandil March 10, 2021



The U.S. Navy plans to select California-based AeroVironment Inc. to manufacture submarine-launched Blackwing drones.

In a notice posted on the Federal website on Tuesday, the Naval Sea Systems Command announced plans to issue a sole source contract to Aerovironment, Inc. for the procurement of Blackwing 10C Electro-Optic and Infrared equipped Unmanned Aerial Vehicles, in support of the Submarine-Launched Unmanned Aerial System Program. Tactical Temporary Installations of the SLUAS system integrating the Blackwing 10C equipped UAV is projected to be approved on 10 March 2021. The U.S. Navy intends to procure up to 120 Blackwing 10C UAVs.

The ordering period of the planned IDIQ contract is projected to begin May 2021 and end May.

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robert.rea@axcel.us | 757-309-5869 | www.axcelinnovation.net

Aerovironment says the Blackwing is a small, tube-launched unmanned aircraft that employs an advanced, miniature electro-optical and infrared payload, integrated inertial/GPS autopilot system and secure Digital Data Link, all packaged into a vehicle that launches from under the surface of the sea, from manned submarines and unmanned underwater vehicles.
https://www.newsunseen.com/u-s-navy-to-award-contract-for-submarine-launched-drones/

India to Buy First U.S. Armed Drones to Counter China, Pakistan Sudhi Ranjan Sen March 9, 2021

India plans to buy 30 armed drones from the U.S. to boost its sea and land defenses as tensions persist with neighbors China and Pakistan, according to officials with knowledge of the matter.

The South Asian nation will approve next month the $3 billion purchase of 30 MQ-9B Predator drones manufactured by San Diego-based General Atomics. The deal would add to India's military capabilities as the drones it has now can only be used for surveillance and reconnaissance.

India is emerging as a strategic defense partner for the U.S., particularly in countering Chinese influence in the Indian Ocean and some areas of Southeast Asia. Prime Minister Narendra Modi's government is in the midst of a 10-year, $250 billion military modernization.
https://www.bloomberg.com/news/articles/2021-03-09/india-to-buy-first-u-s-armed-drones-to-counter-china-pakistan

Flirtey firing up production, taking preorders for delivery drone 2021-03-10 UAV Expert News

Flirtey, the first company in the U.S. to conduct a Federal Aviation Administration-approved drone delivery back in 2015, announced it is ready to ramp up production of its drone delivery system and is now taking preorders. The Flirtey Eagle is part of the overall technology package the company offers, which includes the Flirtey Portal and autonomous software platform. The company is seeking FAA certification for its last-mile delivery drone system.

"Flirtey is certifying and expanding U.S. production of delivery drones to meet growing demand," Matthew Sweeny, Flirtey founder and CEO, said. "Businesses who use Flirtey's best-

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robert.rea@axcel.us | 757-309-5869 | www.axcelinnovation.net

in-class technology for last-mile drone delivery become first movers to unlock lower delivery costs and billions in potential new revenue."

Flirtey has conducted more than 6,000 flights to date, it said. In November, Flirtey was one of 10 drone companies seeking proposed certification from the FAA to classify their Unmanned Aircraft Systems as special class aircraft. According to the FAA, this approval is part of the process in certifying drones for operation, including for package delivery.
https://www.uavexpertnews.com/2021/03/flirtey-firing-up-production-taking-preorders-for-delivery-drone/?utm_source=Master&utm_campaign=eccf1b0e7b-EMAIL_CAMPAIGN_2017_12_20_COPY_01&utm_medium=email&utm_term=0_35ad7bc94d-eccf1b0e7b-89168288

Drone video shows frenzy of sharks off the coast of Florida 10 Tampa Bay March 5, 2021

A drone photographer captured a shark frenzy this week off the coast of Florida.

Paul Dabill Photography posted a video of the shiver of Blacktip sharks Thursday afternoon in front of Singer Island off Palm Beach County in the Riviera Beach area.

Atlantic blacktip sharks are torpedo-shaped gray or gray-brownish creatures with white bellies. Their dorsal, pectoral and tail fins have black tips, according to the National Oceanic and Atmospheric Administration.

They're frequently spotted in large groups. Males and females stay apart when they're not mating. The mating actually happens around this time of year, usually between March and June.

Atlantic blacktip sharks are found year-round in the Gulf of Mexico. And, in the Atlantic Ocean, they're usually found off the coast of Virginia to Florida, though they have reportedly migrated as far north as Cape Cod in the past, according to the NOAA.
https://www.wtsp.com/article/life/animals/drone-blacktip-sharks-florida/67-8750acb7-5fd1-4bf4-857f-07ce91f22d1e

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Rolls-Royce to power Vertical Aerospace UAM aircraft BUSINESS JOE PESKETT MARCH 10, 2021

A Rolls-Royce electrical power system will be integrated into the piloted all-electric vertical take-off and landing vehicle which will carry up to four passengers for 120 miles at cruise speeds of over 200mph and is on course to certify in 2024.

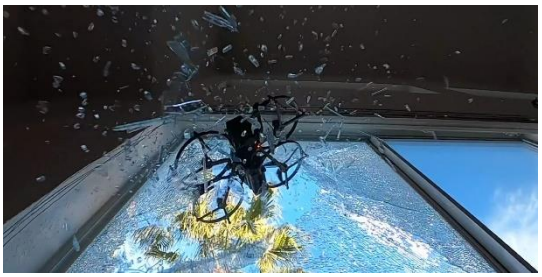
Vertical Aerospace is a key collaboration for Rolls-Royce Electrical as it marks the powerplant firm's first commercial deal in the UAM market.

Rolls-Royce will design the system architecture of the whole electrical propulsion system, the electric power system that includes our latest 100kW-class lift and push electrical propulsion units, the power distribution and the monitoring system that will support operations.

Rob Watson, Director, Rolls-Royce Electrical, said: "We are delighted to collaborate with Vertical Aerospace for the electrical technology that will power their pioneering eVTOL aircraft. This exciting opportunity demonstrates our ambitions to be a leading supplier of sustainable complete power systems for the new Urban Air Mobility market which has the potential to transform the way that people and freight move from city to city."
https://www.commercialdroneprofessional.com/rolls-royce-to-power-vertical-aerospace-uam-aircraft/

New SWAT drone smashes windows, opens doors, and negotiates with suspects

David MacQuarrie Mar. 10th 2021



SWAT teams face criticism for their no-knock warrants that kill or injure people – including bystanders and police. If surprise is necessary, sending a drone first into a dangerous situation could theoretically save lives. But how to get a relatively light drone into a locked apartment? The LEMUR's answer is to just smash through the window.

The LEMUR is built by BRINC Drones to help police locate, isolate, and communicate with suspects. It has an encrypted cellphone link for two-way communication and can right itself if it

crashes upside down. But it's that remarkable glass smasher that sets it apart from the many other police drones we've seen.

BRINC says the 5-inch blade has tungsten teeth and can spin at up to 30,000 RPM. It's enough to break tempered, automotive, and most residential glass. It's an add-on feature to the drone, but it can be quickly attached with three thumb screws.

LEMUR is distributed by Drone Nerds, and a fully equipped model can cost as much as $10,000. Drone Nerds says it's already received multiple from various SWAT teams, including the U.S. Marshals Service. https://dronedj.com/2021/03/10/new-swat-drone-has-whirling-blade/#more-52030

Air Force Seeks Info on New Capabilities for Next-Gen Multirole UAS Jane Edwards March 10, 2021 News, Technology

The U.S. Air Force has asked industry to provide information as it seeks to create next-generation multirole unmanned aerial systems.

The Air Force Life Cycle Management Center has set three focus areas for the request for information and those are air domain awareness, high value airborne asset protection and multirole UAS systems composed of attritable, expendable, survivable and reusable platforms.

For the first focus area, the service wants information on sensors or sensor networks that offer early warning and identification of hostile air operations in contested environments; software, hardware and algorithms to support data sharing and integration; and resilient communications suites.

AFLCMC has also asked for information on sensors and defensive systems for high value airborne asset protection and defensive counterair capabilities to protect assets from long-range enemy fighters and other kinetic and non-kinetic threats.

Under the third focus area, respondents should describe procurement concepts to support near-term demonstration and prototyping that could support UAS launch and recovery operations. Responses are due April 9. https://blog.executivebiz.com/2021/03/air-force-seeks-info-on-new-capabilities-for-next-gen-multirole-uas/?utm_campaign=ExecutiveBiz%20Daily%20Headlines%2003.10.2021%20%28Sz7cKK%29&utm_medium=email&utm_source=Ebiz%20Welcome%20Email&_ke=eyJrbF9jb21wYW55X2lkIjogIlRCS0t4UCIsICJrbF9lbWFpbCI6ICJyb2JlcnQucmVhQGF4Y2VsLnVzIn0%3D

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

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SpaceX launches 60 new Starlink satellites to orbit, nails rocket landing at sea

Amy Thompson 2 hours ago

CAPE CANAVERAL, Fla. — A SpaceX Falcon 9 rocket lit up the predawn sky early this morning (March 11) as it carried a new batch of 60 Starlink internet satellites into orbit, before nailing its landing on a floating platform at sea.

The two-stage Falcon 9 booster lifted off from Space Launch Complex 40 here at Cape Canaveral Space Force Station at 3:13 a.m. EST. About 8.5 minutes later, the rocket's reusable first stage returned to Earth for its sixth landing, touching down on one of SpaceX's drone ships. Weather forecasters at the U.S. Space Force's 45th Weather Squadron predicted a 90% chance of favorable conditions for launch this morning, and Mother Nature delivered.

This latest liftoff marked SpaceX's seventh mission of 2021 and the company's 21st 60-satellite Starlink launch overall. https://www.space.com/spacex-starlink-launch-success-rocket-landing

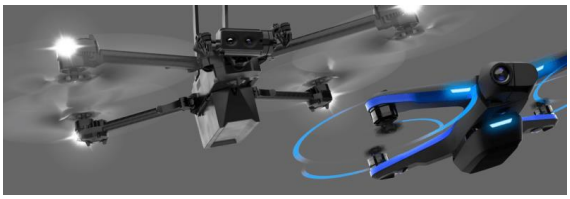
TECH AND WEAPONS GIANT AXON SET TO INTEGRATE SKYDIO DRONES

March 11, 2021 Sally French The Drone Girl News

Axon, a public safety, tech and weapons company is bringing Skydio drones into its mix. The Scottsdale, Ariz.-based company today announced a partnership with Silicon Valley-based drone maker Skydio to offer Skydio's autonomous drones to law enforcement and emergency responders via Axon's unmanned aircraft program, Axon Air. That means Axon will become an exclusive reseller of Skydio products to public safety organizations.

The partnership also is set to result in an upcoming integration between Skydio drones and other arms of the company which include Axon Air (an arm that has already been using other, non-Skydio drones), Axon Evidence (a software program for managing data) and Axon Respond (a software that manages all aspects of emergency operations including dispatching, real-time communications and situational awareness).

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



Starting today, Skydio drones will be available for purchase by Axon. Axon Evidence and Respond for Devices integration is set to be available later this year.

With the newly announced partnership, agencies will now be able to gather Skydio drone-captured imagery and then manage and share that data (alongside data and video collected from other means such as body camera video) in the Axon Evidence digital evidence management platform. Axon's real-time operations platform, Respond for Devices, will enable responders to access live-streamed views from on-the-ground body cameras and drone footage. Skydio's 3D adaptive scanning software, Skydio 3D Scan, is also set to work into the Axon suite of Axon products by automating scans of crime and accident scenes to create 3D reconstruction models.
https://www.thedronegirl.com/2021/03/11/axon-skydio-drone-partnership/

Draganfly Enters Agreement with Applied Research and Innovations Services

March 10, 2021 News

Draganfly Inc today announced that it has entered into an agreement with the Southern Alberta Institute of Technology ("SAIT") to advance UAV delivery technology. Draganfly, SAIT Centre for Innovation and Research into Unmanned Systems (CIRUS), and SwissDrones AG will work towards the development of an integrated payload system to be used in direct collaboration with other heavy-duty and long-haul UAV manufacturers. This will include:

- Designing, developing, and testing of a cargo system for medical delivery to be mounted on a variety of drones including VTOL rotary and fixed-wing platforms.
- Developing test protocols, operational procedures, and standards for Beyond Visual Line of Sight medical delivery operation within the framework of Transport Canada, US Federal Aviation Agency, and European Union Aviation Safety Agency procedures and protocols.
- Developing an operational manual for BVLOS operation of RPASS to be used for commercial application under an Air Operator's heavy lifting and long endurance Certificate.

"Our team is looking forward to the outcome of this project, which is to build the ultimate payload system which expands the capability for UAV delivery," said Tom Bornhorst, VP CDARI at SAIT. https://uasweekly.com/2021/03/10/draganfly-enters-agreement-with-applied-research-and-

innovations-services-to-advance-uav-delivery-technology/?utm_source=rss&utm_medium=rss&utm_campaign=draganfly-enters-agreement-with-applied-research-and-innovations-services-to-advance-uav-delivery-technology&utm_term=2021-03-11

Ohio police angry after people throw beer bottles at their drone Scott Simmie Mar. 11th 2021

It's no secret that police departments have found all sorts of ways to use drones. They're useful at accident scenes, to quickly capture the scene for the purposes of evidence so that the road can be cleared more quickly. They're useful for situational awareness during large demonstrations. They've even been great for catching suspects and finding missing persons, plus a ton of other use-case scenarios. Usually, these operations go off without a hitch.

But not this one in Ohio. It appears that the Portsmouth, Ohio, police department has a drone. We called the department's detective division but didn't get an answer. Maybe they're all busy trying to find the people in the picture who have been trying to take down the police drone with beer bottles.

According to the Tweet, which we are trying to verify, the police use that drone on occasion to monitor an area where drugs are a concern. However, it's clear in the tweet you're about to see that *something* is going on:

Attention Wayne Hills Residents PORTSMOUTH OHIO Please stop throwing beer bottles at the drones. They are property of Portsmouth Police Department and they run surveillance on the property for your protection. We repeat, STOP KNOCKING DOWN OUR ANTI-DRUG ACTIVITY DRONES! https://dronedj.com/2021/03/11/people-beer-bottles-ohio-police-drones/#more-52176

Drones are being used to map the St. Lawrence River Josh Spires Mar. 11th 2021

The St. Lawrence River in Canada has long been an area for researchers and scientists to track the animals to learn more. Drones have now joined in by allowing the River Institute to map the river and track the wildlife at a much lower cost.

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

With the River Institute, fish biologist Matt Windle began using drones back in 2013 to track the critically endangered American eels. The eels were equipped with a tracker that the drone could pick up and watch as the eels made their way down the river.

Before this, Windle and his team would track the eels by chasing after them in a boat to keep in range of the signal. Not only was this hard to do, but it also required multiple people and a lot of time to get usable data. This got Windle thinking and wondering if he could equip a drone with a receiver and fly it like a plane. And that's how Windle and the River Institute began using drones to lower costs and improve the counting ability in the river. Windle shares what the drones allow him to do from the air:

"Multispectral cameras can also collect information on wavelengths of light that we can't see, which tells you about plant health. So, healthy green plants have lots of chlorophyll in them. And they absorb most of the visible light, and they reflect really strongly near-infrared light."
https://dronedj.com/2021/03/11/drones-are-being-used-to-map-the-st-lawrence-river/

Successful trial leads the way for quieter drone propellers Josh Spires Mar. 11th 2021

Researchers from the Royal Melbourne Institute of Technology in Australia have successfully trialed new, quieter drone propellers. The team working on the project managed to produce a propeller that produces around 15dB less noise than the current market.

The project is lead by RMIT's aerospace engineer and lead researcher Dr. Abdulghani Mohamed. He shared that the team used complex algorithms to create the propellers and combined the designs with the way human ears hear a sound to produce a quieter design.

"By using our algorithms to iterate through a variety of propeller designs, we were able to optimize for different metrics such as thrust, torque, sound directivity, and much more. We also formulated a new metric, which involves how the human ear perceives sound, and propose to use that in future designs."

The team also includes members from XROTOR, which is currently working on producing smart drones for aerial surveillance, videography, reconnaissance, and intelligence purposes. XROTOR managing director, Geoff Durham, added:

"Not only were the designs appreciably quieter to the human ear, but the propellers had a higher thrust profile against standard market propellers at the same throttle signal input."

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

https://dronedj.com/2021/03/11/successful-trial-leads-the-way-for-quieter-drone-propellers/#more-52084

12Mar21

LiDAR Surveys by Drone: Increasing Flight Endurance for a Big Impact on Productivity Miriam McNabb March 11, 2021

Used for creating precise 3D models of terrain for mapping and more, LiDAR surveys are an important commercial application for the drone industry – but battery limitations and the associated short flight times remain a problem. Now, California-based Skyfront is working with European UAV LiDAR solution provider Routescene to explore the impact of increasing flight endurance, using Skyfront's Perimeter 8 gasoline-electric hybrid multicopter.

Drone battery life is a problem for all commercial drone operations: but when combined with the weight of LiDAR sensors, flight endurance can be severely affected. "Typically a drone utilising lithium polymer batteries and carrying a 3.3kg payload would operate with a flight time of around 15-20 minutes. Landing, replacing the batteries and take-off between each flight can take longer than the flight itself, directly influencing the size of the survey area that can be flown each day."

For larger LiDAR survey sites that might require more than one take-off and landing site, the limited flight time can lead to significant downtime. Teams from Skyfront and Routescene set out to demonstrate that increasing flight time by using a hybrid fueled drone could signficantly impact data collection productivity.

The results were an impressive 3 hour flight time for the Skyfront Perimeter 8 carrying a Routescene LiDAR payload, reducing downtime so significantly that a typical 2-day project could be completed in one day. "The Skyfront Perimeter 8 is an eight rotor hybrid UAV designed for carrying heavier payloads. The Perimeter 8 has both rotor and complete engine redundancy for safety," explains the release. https://dronelife.com/2021/03/11/lidar-surveys-by-drone-increasing-flight-endurance-for-a-big-impact-on-productivity/