**1 . Date: 17-04-2023General - Engine / PowersourceAmprius to Provide Next Generation Drone Batteries to AeroVironment: Unparalleled Run TimeURL: https://dronelife.com/2023/04/17/amprius-to-provide-next-generation-drone-batteries-to-aerovironment-unparalleled-run-time/**

DRONELIFE first heard about Amprius Technologies, Inc. (NYSE: AMPX) at Commercial UAV Expo last year. Amprius has an answer to one of the most persistent problems in drone technology: flight endurance and battery life. Amprius manufactures next-generation lightweight lithium-ion batteries with its Silicon Anode Platform. The company’s proprietary anode technology enables the production of battery cells with energy density levels approaching twice the performance of current commercially available graphite cells.

The company has had a big win, providing a commercial level shipment of Amprius drone batteries to AeroVironment (NASDAQ: AVAV) for the Switchblade 300 Block 20 loitering missile system. Also called the “suicide drone,” the Switchblade 300 could prove the case for putting Amprius batteries in more commercial drone platforms.

The Amprius lightweight, high energy density lithium-ion battery cells are expected to increase the flight time of the new Switchblade by at least 50%, for longer flight endurance and extended loitering capability.

“This partnership with AeroVironment further validates the potential of our silicon anode technology for advanced aviation and defense applications,” said Dr. Kang Sun, Chief Executive Officer of Amprius. “We look forward to continuing to work with the AeroVironment team to greatly improve flight time of their tactical missile systems.”

Amprius began delivering cell shipments as a supplier to AeroVironment in 2022 and is fulfilling additional commitments for the future. AeroVironment is currently integrating Amprius cells into some defense products and is a strategic investor in the Company.

“Amprius’ battery cells have the power capabilities to transform the range and mission time for our applications,” said Brett Hush, AeroVironment’s vice president and product line general manager of tactical missile systems. “This capability could allow operators to deploy loitering missile systems from a greater range to identify threats and deliver a precision lethal payload with minimal collateral effects.”

**2 . Date: 24-08-2023ISR / ISTAR - Tactical - Regulation - FAA Grants Phoenix Air Unmanned Waiver for BVLOS Flight with Swiss Drones Uncrewed HelicopterURL: https://dronelife.com/2023/08/24/faa-grants-phoenix-air-unmanned-waiver-for-bvlos-flight-with-swiss-drones-uncrewed-helicopter/**

In May, the FAA asked for public input on requests for waivers to fly Beyond Visual Line of Sight (BVLOS.) Phoenix Air Unmanned, uAvionix, Zipline, and UPS Flight Forward all applied for waivers: today, FAA announced that Pheonix Air Unmanned has been granted authorization to operate BVLOS for “aerial work, aerial photography, survey and powerline and pipeline patrol and inspection. The authorization allows these operations below 400 feet altitude over certain roads and sparsely populated areas below pre-planned flight paths.”

The agency is reviewing the other requests.

The authorization allows BVLOS flight with an uncrewed vehicle weighing more than 55 pounds, the SwissDrones SVO 50 V2 UAS – a multipurpose uncrewed helicopter. BVLOS is a significant issue for a wide range of industries: from long range infrastructure to completely remote operations or drone-in-a-box solutions, directed from a control center a significant distance away.

Phoenix Unmanned will operate the SVO 50 V2 UAS, which has a special airworthiness certificate, for training, research and development: so that they can evaluate the aircraft before applying for the authorizations required for regular flight. A major provider of mapping and inspection services, the company says that they are exploring the use of larger aircraft in order to accommodate business needs for greater flight endurance and payload capacity. Phoenix will operate under the waiver in rural and sparsely populated areas.

The waiver is a win for Phoenix and for the FAA. While the agency has not yet indicated when a final rule on BVLOS flight may be expected, they have steadily granted more waivers in an effort to continue to gather pertinent data from the field. From the FAA announcement:

The FAA is focused on developing standard rules to make BVLOS operations routine, scalable and economically viable. The agency chartered the Beyond Visual Line of Sight Aviation Rulemaking Committee on June 9, 2021 to provide safety recommendations to the FAA. We are reviewing their final report.

**3 . Date: 31-08-2023Swarm - Regulation - Canada Authorizes Drone Swarms Operating Beyond Visual Line of Sight to Fight WildfiresURL: https://dronelife.com/2023/08/31/canada-authorizes-drone-swarms-operating-beyond-visual-line-of-sight-to-fight-wildfires/**

Canada has authorized the operation of drone swarms beyond visual line of sight (BVLOS) for fighting wildfires.

Canadian drone service provider IN-FLIGHT Data is a Canadian SAIL 6 operator, holding three Guinness World Records for its drone flights. Now, IN-FLIGHT has earned a first-of-its-kind authorization for simultaneous drone operations up to 2,500 feet high, in Class F and Class G airspace, day or night.

The permission has been granted as wildfires continue to burn in the country, ravaging landscapes and threatening towns. Drones offer a safe and effective means of collecting data, providing critical information to firefighters.

Drone Swarms: SIMOPS

Drone swarms represent a huge opportunity for commercial drones. “Simultaneous drone operations, or SIMOPS, is a specific type of advanced drone operation, where an advanced pilot is able to control multiple aircraft from a single control station,” explains IN-FLIGHT Data. SIMOPS is an efficient way to operate routine missions, shifting the return on investment for enterprise drone programs.

Transport Canada has not yet released a rule on low-risk BVLOS operations: the proposed regulations are currently in the public comment phase.

“Transport Canada’s long-term goal is to safely integrate drones into Canadian skies. This is similar to other ICAO countries who are developing similar transportation innovation, such as the US, European Union, Australia and New Zealand. These technologies, such as remote traffic management and SIMOPS, marks a new type of innovation and efficiency in aviation in Canada,” says IN-FLIGHT Data.

**4 . Date: 02-11-2023Cargo - Contract - Autonomous Loading and Unloading for Cargo Drones: MightyFly Wins Air Force SBIR Phase II ContractURL: https://dronelife.com/2023/11/02/mightyfly-scores-air-force-sbir-phase-ii/**

MightyFly awarded the Department of the Air Force SBIR Phase II contract and received investment from Draper Associates

Applications for small drone delivery of food and retail goods are developing around the world – but the opportunity for cargo drones, autonomous eVTOL aircraft with larger payload capacity, may be even greater. Today, MightyFly announced new investment and an AFWERX SBIR Phase II contract to develop the company’s Autonomous Load Mastering System (ALMS.) The ALMS will allow MightyFly’s autonomous hybrid eVTOL “to load, unload and deliver cargo autonomously and to address the most pressing expedited logistics challenges.”

The applications are almost endless, with the potential to relieve traffic and emissions while delivering significant efficiencies and cost savings to any business that requires point-to-point, same-day or expedited delivery services. In the context of military use, an autonomous system for delivering supplies could be lifesaving. “The MightyFly solution is ideal for logistics, supply chain, manufacturing, healthcare, pharmaceutical, retail, automotive and oil and gas industries, for National and State parks, humanitarian and disaster relief organizations, and for defense and nondefense governmental agencies,” says the company announcement.

Air Force SBIR grants are designed to support innovative technologies and bring new solutions to viability sooner. The support not only provides financial resources to small businesses, it identifies market needs and highlights solutions that address specific problems the Air Force is trying to solve.

“The MightyFly team is working to revolutionize expedited logistics via large, autonomous, hybrid eVTOL cargo aircraft. To be chosen by AFWERX for this SBIR Phase II contract signifies a vote of confidence in our mission and technical expertise. We are honored to partner with the U.S. Air Force and to leverage our know-how to develop a system that directly addresses agile and expedited logistics needs and provide a major feature that is needed for the successful integration of autonomous aircraft within logistics,” said Manal Habib, CEO of MightyFly.

MightyFly received additional funding from Draper Associates in September. That investment will help MightyFly advance the development of its autonomous cargo aircraft, boosting the company’s go-to-market efforts.

“We backed MightyFly because of their incredible team. If you absolutely need something delivered right now, MightyFly can deliver it. I suspect MightyFly will save many lives, deliver important contracts, fix many vehicles and machines, and solve many problems we haven’t even thought of yet. For short haul, medium loads, this company has your solution,” said Tim Draper, Founding Partner of Draper Associates.

MightyFly is scheduled to complete the manufacturing of its third-generation MF100 aircraft later this year, is scheduled to publicly debut its autonomous cargo aircraft performing delivery flight demonstrations with 100 pounds of payload in Michigan in 2024, and is working with partners in the planning of Proof of Concept (POC) programs in late 2024 and throughout 2025.

**5 . Date: 21-11-2023ISR / ISTAR - Tactical - General - PayloadTEKEVER and CRFS Introduce New UAS with Ultra-Sensitive RF Receiver for Precise Target GeolocationURL: https://dronelife.com/2023/11/21/tekever-and-crfs-introduce-new-uas-with-ultra-sensitive-rf-receiver-for-precise-target-geolocation/**

TEKEVER and CRFS Unveil Advanced UAS Enhancing Target Geolocation Capabilities

Global unmanned systems technology leader TEKEVER and ultra-sensitive RF receiver pioneer CRFS have achieved a significant milestone in their collaboration. Together, they have introduced the first sub-tactical unmanned aerial system (UAS) equipped with highly sensitive RF sensors designed for precise geolocation of ground-based targets over long distances.

The TEKEVER AR5, boasting a 20-hour endurance range, a 50 kg payload capacity, and a cruise speed of 100 km/h, now incorporates the CRFS RFeye Node. This lightweight and rugged RF receiver, featuring a 100MHz IBW and a frequency range of up to 40GHz, enables the geolocation of ground-based targets beyond the horizon. The integration significantly enhances intelligence, surveillance, and reconnaissance (ISR) capabilities.

Capable of taking off from short, unpaved airstrips, the wide-area surveillance AR5 is easily deployable. When coupled with ruggedized RF sensors optimized for size, weight, and power (SWaP) with an IP67 form factor, the UAS provides unparalleled spectrum monitoring, detection, signal capture, and geolocation through time difference of arrival (TDoA) capabilities.

The partnership between TEKEVER and CRFS introduces a versatile asset for end-users, covering vast land or sea areas with applications spanning maritime surveillance, search and rescue, border monitoring, military ISR, and regulatory spectrum monitoring. The drone’s elevated operational altitude results in an expanded signal collection radius, offering unprecedented operational range gains and enabling innovative concepts of operation.

For advanced capabilities, the integrated UAS can be combined with existing ground-based units to establish an adaptable multidomain network of receivers for superior passive ISR coverage over extensive areas. This holds particular significance in active combat zones, where increased altitude facilitates signal detection at greater distances from the front line.

Dr. Pio Szyjanowicz, COO of CRFS, emphasized the collaboration’s technical achievements, stating, “To make this happen, our engineering teams have combined their ingenuity and agility to overcome the technical challenges that are inevitable when integrating high-performance electronics systems on an airframe. One of the most significant was that UAS have a significant number of transmitters onboard, that have the potential to interfere with the highly sensitive RFeye receiver payload. Achieving the optimal solution in terms of antenna position and RF filtering is just one example of the excellent teamwork between TEKEVER and CRFS.”

Tiago Nunes, Product Director at TEKEVER, highlighted the groundbreaking nature of the partnership: “The partnership between TEKEVER and CRFS is a testament to the power of collaboration. It’s a game-changer, offering end-users an incredibly versatile asset that can cover vast land and sea areas. The possibilities are limitless, from maritime surveillance, search and rescue, border monitoring, to military ISR, and even regulatory spectrum monitoring.”

This collaboration between TEKEVER and CRFS represents a perfect union of expertise and technology, resulting in a solution that raises the bar for long range surveillance drones.

**6 . Date: 14-12-2023Cargo - Small - General - SoftwareWhat’s Inside the Zipline Platform: NVIDIA’s Jetson Edge AIURL: https://dronelife.com/2023/12/14/whats-inside-the-zipline-platform-nvidias-jetson-edge-ai/**

Zipline, a San Francisco-based company specializing in drone deliveries, has achieved a significant milestone by completing over 800,000 deliveries across seven countries since its establishment in 2011. The company, valued at over $4 billion after securing $330 million in recent funding, has expanded its services to include partnerships with notable entities such as Seattle’s Pagliacci Pizza, GNC, Intermountain Health, OhioHealth, and Michigan Medicine.

The Zipline, NVIDIA Techology

A key factor in Zipline’s success lies in its innovative use of the NVIDIA Jetson edge AI and robotics platform to power its drone fleet. Zipline’s drones, having covered more than 55 million miles, leverage the capabilities of the Jetson Xavier NX system-on-module for autonomous navigation and precision landings. This technology allows the drones to process sensor inputs, employ GPS, air traffic control communications, inertial measurement unit sensors, and an onboard detection and avoidance system, ensuring safe and accurate deliveries.

A.J. Frantz, Navigation Lead at Zipline, highlighted the significance of the NVIDIA Jetson module: “The NVIDIA Jetson module in the wing is part of what delivers our acoustic detection and avoidance system, so it allows us to listen for other aircraft in the airspace around us and plot trajectories that avoid any conflict,” said A.J. Frantz.

Zipline operates two main drone platforms. The P1 drone, in service for seven years, utilizes the Jetson Xavier NX system for processing sensor inputs, ensuring safe and efficient autonomous flights. On the other hand, the P2 drone, equipped with two Jetson Orin NX modules, is designed for hybrid functionality, offering the ability to hover and carry eight pounds of cargo for 10 miles. The redundancy in the drone’s design enhances safety, with one module dedicated to sensor fusion and the other integrated into the delivery droid.

Joseph Mardall, Head of Engineering at Zipline, explained that the P2 drone aims to integrate seamlessly into people’s lives, providing a quick, safe, and precise delivery experience.

The company’s drones, affectionately called ‘Zips,’ offer delivery times that are 7 times faster than traditional vehicle deliveries. “Our aircraft fly at 70 miles per hour, as the crow flies, so no traffic, no waiting at lights — we’re talking minutes here in terms of delivery times,” said Mardall. “Single-digit minutes are common for deliveries, so it’s faster than any alternative, for sure.”

Zipline’s customer roster includes prominent names such as Walmart, Sweetgreen, MultiCare Health Systems, and the government of Rwanda. The company’s initial focus on delivering blood in Rwanda has expanded to include food and convenience items.

In addition to its operational efficiency, Zipline is committed to environmental sustainability. The use of NVIDIA Jetson Orin modules contributes to energy efficiency in autonomous machines. Zipline reports a 97% reduction in carbon emissions compared to traditional gasoline-driven vehicles, aligning with their commitment to minimizing environmental impact.

Frantz and Mardell emphasized the importance of leveraging Jetson-driven applications for sustainability, noting the potential of next-generation electric-driven autonomous machines to replace those contributing to pollution. “We are super excited to significantly reduce carbon emissions,” said Mardall. “And when building an electric aircraft, efficiency is totally key — every watt, every fraction of a watt, every joule that we can claw back can be turned into payload and range.”

As Zipline continues to revolutionize the delivery industry with its cutting-edge technology and commitment to sustainability, the company remains a key player in the drone delivery landscape.

**7 . Date: 28-12-2023ISR / ISTAR - Mini - Contract - Johnnette Technologies Secures Contract to Supply Crash-Resistant UAV for Indian Army Border SurveillanceURL: https://dronelife.com/2023/12/28/johnnette-technologies-secures-contract-to-supply-crash-resistant-uav-for-indian-army-border-surveillance/**

Indian Army Awards Contract to Johnnette Technologies for Supply of Made-in-India Johnnette JF-2 Tactical, India’s First Crash Resistant Drone

Johnnette Technologies, a leading Indian Unmanned Systems manufacturer headquartered in Noida, has secured a contract from the Indian Army to supply its flagship tactical fixed-wing UAV, the Johnnette JF-2, for border surveillance. The company proudly asserts that the JF-2 is India’s first crash-resistant drone, representing a significant milestone in the nation’s pursuit of self-reliance in defense manufacturing.

Founded in 2014 by Lt Cdr John Livingstone, a retired Indian Navy officer, Johnnette Technologies has been at the forefront of developing cutting-edge unmanned systems technology for both military and commercial applications in India. The company’s commitment aligns with the ‘Make in India’ initiative spearheaded by Prime Minister Shri Narendra Modi.

Lt Cdr John Livingstone, Founder, and CEO of Johnnette Technologies, expressed his pride in contributing to national security: “It is a great feeling to be able to serve the nation even after retiring from the Defence Forces. My team has done prolonged R&D and have created this tactical fixed-wing UAV, Johnnette JF-2, for the Military requirements. The uniqueness of our lightweight JF-2 is its ability to be crash-resistant in multiple terrains due to its sturdy belly-landing design.”

The Johnnette JF-2 is a hand-launched fixed-wing tactical UAV designed specifically for surveillance and reconnaissance operations. Equipped with a high-definition day camera and a thermal imaging camera, the platform is tailored for day and night operations. Noteworthy features include a crash-proof avionics bay, anti-jamming, and anti-spoofing capabilities, making it an ideal solution for land forces. This marks the first deployment of a fixed-wing UAV in its class by the Indian Army for border surveillance.

Johnnette Technologies Pvt Ltd., established in November 2014, has been a trailblazer in Unmanned Systems Technology in India. The company has consistently delivered cutting-edge aerospace systems to the paramilitary, commercial, aerospace, and defense sectors, with a primary focus on unmanned systems technology. In addition to the Johnnette JF-2, the company also manufactures low-cost loitering munitions (Kamikaze drones) and has ambitious plans to produce Medium Altitude Long Endurance (MALE) Unmanned Combat Aerial Vehicles (UCAVs) in the future.

As India continues to strengthen its indigenous defense capabilities, Johnnette Technologies’ innovative contributions underscore the growing role of domestic firms in meeting the evolving requirements of the armed forces.

**8 . Date: 04-01-2023Cargo - Small - General - PlatformZiyan’s GreyWhaleG1: Raising the Bar for Unmanned Cargo HelicoptersURL: https://dronelife.com/2024/01/04/ziyans-greywhaleg1-raising-the-bar-for-unmanned-cargo-helicopters/**

Ziyan Unveils New Generation Cargo Unmanned Helicopter: GreyWhaleG1

Ziyan is ringing in the new year of 2024 with the release of its latest innovation, the GreyWhaleG1. This new generation cargo unmanned helicopter is set to revolutionize air transport solutions across challenging terrains.

Announced on the company’s Facebook page, the GreyWhale G1 is designed for transporting cargo across islands, mountains, and high-altitude areas. It aims to provide users with more efficient, economical, and safe air transport solutions.

Key Features of the GreyWhaleG1

Ziyan notes the GreyWhaleG1 has several key differentiators :

Ziyan continues to push the boundaries of unmanned air transport with the GreyWhaleG1, providing a glimpse into the future of cargo delivery. The market for unmanned cargo vehicles has seen significant growth and attention in recent years. Unmanned aerial vehicles (UAVs) are highly versatile and serve multiple areas of application, including cargo and logistics. The increasing demand for UAVs in civilian applications such as nuclear plant operations, urban research and rescue, agricultural harvesting and spraying, firefighting, and crowd control aids the market growth. The global market for unmanned cargo aircraft (UCA) is expected to surpass $1 billion by 2030. The release of Ziyan’s GreyWhaleG1 could be a timely response to this growing market demand.

**9 . Date: 26-01-2024Cargo - MALE - General - PlatformMightyFly Unveils Third Generation Cento Aircraft: Pioneering Efficiency in Autonomous Same-Day Cargo DeliveriesURL: https://dronelife.com/2024/01/26/mightyfly-unveils-third-generation-cento-aircraft-pioneering-efficiency-in-autonomous-same-day-cargo-deliveries/**

MightyFly Unveils Third Generation Cento Cargo Drone for Autonomous Same-Day Deliveries

MightyFly, a pioneer in autonomous aerial logistics, introduced its latest cargo drone, the 2024 Cento aircraft, marking the third generation of the MF100 eVTOL series. The unveiling ceremony took place at the company’s headquarters in San Leandro, CA, on January 25, 2024.

The 2024 Cento boasts cutting-edge features, including an efficient design, larger cargo bay, and autonomous delivery operations. This groundbreaking hybrid eVTOL cargo aircraft is designed to carry a payload of one hundred pounds over a distance of six hundred miles. The Federal Aviation Administration (FAA) has granted the 2024 Cento the Special Airworthiness Certificate and the Certificate of Authorization (COA) for an air corridor between Byron and New Jerusalem airports.

“MightyFly’s commitment to innovation is evident in the design and capabilities of the 2024 Cento,” states a MightyFly company announcement. The aircraft introduces several key features, such as a tandem wing design, structural conductors for increased reliability, a composite structure for reduced weight, and a modular design for optimized maintenance.

A significant advancement is the incorporation of MightyFly’s Autonomous Load Mastering System (ALMS), enabling the aircraft to autonomously manage cargo operations. This includes opening and closing the cargo bay door, receiving and ejecting packages, internal positioning and locking, and autonomously determining weight and balance – all without operator intervention.

MightyFly is actively collaborating with Agility Prime and Air Mobility Command to address the U.S. Air Force’s autonomous aerial logistics needs through the development of the ALMS feature.

The Cento’s cargo bay is notably larger than its predecessor, accommodating a diverse range of payloads’ center of gravity. This versatility positions the Cento as a technology differentiator in the market, catering to various industries such as logistics, manufacturing, healthcare, pharmaceutical, retail, automotive, oil and gas, as well as humanitarian and disaster relief organizations.

“We are very excited to showcase the 2024 Cento, which combines innovation with operational efficiency. It has the potential to transform expedited logistics across multiple industries,” remarked Manal Habib, founder and CEO of MightyFly.

The FAA approval for a new corridor between Byron and New Jerusalem airports, reaching up to 5000 ft in altitude, is a significant milestone. It enables MightyFly to commence A to B flights, integrate the autonomous eVTOL into general aviation, and conduct A to B customer flight demonstrations, underscoring the maturity of MightyFly’s autonomous aircraft and operations.

Investor and Founding Partner of Draper Associates, Tim Draper, expressed enthusiasm for the Cento’s potential to revolutionize logistics. “This technology will help save lives and solve painful logistics needs of businesses around the globe,” said Draper.

MightyFly concluded the production of the third generation Cento in early January 2024 and is set to commence aircraft qualification tests and flight trials between Byron and New Jerusalem airports. The company plans to debut public autonomous cargo aircraft delivery flights in Michigan in the fall of 2024, showcasing point-to-point autonomous delivery use cases.

MightyFly’s mission is to provide fast, affordable, and environmentally conscious expedited deliveries to businesses and governments. With a cargo capacity of 100 to 500 pounds, a range of 600 miles, and a speed of 150 mph, MightyFly continues to be at the forefront of autonomous aerial logistics.

**10 . Date: 02-02-2024ISR / ISTAR - Tactical - Pitch - TEKEVER AR5 Drone Successfully Demonstrates Lifeboat Deployment in Italian Coast Guard Search and Rescue ExerciseURL: https://dronelife.com/2024/02/02/tekever-ar5-drone-successfully-demonstrates-lifeboat-deployment-in-italian-coast-guard-search-and-rescue-exercise/**

AR5 Lifeboat Drone: Utilizing AI-powered Equipment to Save Lives at Sea

TEKEVER, a prominent European leader in Unmanned Aerial Systems (UAS), recently achieved a milestone in maritime safety through the successful deployment of a lifeboat from its AR5 drone. The groundbreaking technology was demonstrated during a search and rescue exercise conducted by the Italian Coast Guard in partnership with the European Maritime Safety Agency (EMSA).

The AR5 drone, equipped with optical and infrared cameras, a maritime radar, an AIS receiver, and an emergency position-indicating radio beacon antenna, showcased its ability to deploy a lifeboat for up to eight people with high precision. The fully automatic operation of the drone relies on onboard sensors to detect vessels or humans on the water. Leveraging artificial intelligence, the drone calculates the optimal time to release the lifeboat close to the distressed vessel or person without human intervention, ensuring a timely and safe deployment.

The system takes into account various factors, including weather conditions and flight plan restrictions, making it adaptable to a wide range of situations. This capability holds significant promise in reducing the 2,500+ marine casualties reported each year, as highlighted by EMSA in October 2023.

TEKEVER, in collaboration with CLS, has been providing EMSA with maritime surveillance solutions using drones as a service since 2016. This cost-effective solution has already proven its efficiency, with nearly 2,000 hours of flights and almost 300 missions conducted across Portugal, Italy, Spain, France, and the United Kingdom.

Commenting on the successful demonstration, TEKEVER’s CEO, Ricardo Mendes, said: “This successful demonstration by one of the leading maritime safety agencies is a fantastic endorsement of TEKEVER’s cutting-edge technology. We look forward to continuing this partnership with EMSA to improve the surveillance of European waters and ultimately save lives.”

TEKEVER, recognized as a market leader in advanced unmanned aerial technology systems for maritime surveillance, has a rich portfolio that combines Edge AI, satellite communications, and cloud computing. The company provides real-time information and advanced analytics through globally accessible web and mobile interfaces. Additionally, TEKEVER is acknowledged for its expertise in advanced satellite communication and networking systems for multi-satellite missions, including Inter-Satellite Links, as well as satellite RF payloads for Earth observation and space exploration.

With research and development, engineering, and production facilities in Portugal, France, and the United Kingdom, TEKEVER collaborates closely with a global network of partners to offer local support to customers worldwide. For more information, visit their website at www.tekever.com.

**11 . Date: 19-04-2024Cargo - Small - Market - Zipline Will Reach One Millionth Drone Delivery Milestone Today: Announces New Service Partners in the U.S.URL: https://dronelife.com/2024/04/19/zipline-will-reach-one-millionth-drone-delivery-milestone-today-announces-new-service-partners-in-the-u-s/**

Expansion Includes Partnerships with Panera Bread, Memorial Hermann Health System, and Jet’s Pizza

Update: the milestone was hit at 6:18 AM EST 19 April: see company blog post here.

According to a Zipline announcement, the company, known as the world’s largest autonomous delivery system, will today reach a historic milestone by completing its one millionth commercial drone delivery. This achievement marks Zipline as the first company globally to reach such a scale in drone delivery operations.

Zipline’s autonomous drones, which operate with zero emissions, have collectively flown over 70 million miles and delivered more than 10 million products across four continents. The company reported a significant increase in demand, leading to the recent expansion of its Platform 2 (P2) system in the U.S. This system will now deliver for new partners including Panera Bread, Memorial Hermann Health System, and Jet’s Pizza in various metropolitan areas such as Seattle, Houston, and Detroit.

The expansion comes on the heels of substantial growth in the last two years, where Zipline made 70% of its deliveries. These were facilitated by expanding services to new sectors such as retail with Walmart, agriculture, animal health in Africa, and food delivery in Japan. In the U.S., Zipline primarily delivers fresh produce, whereas internationally, the focus has been on child nutrition and vaccines.

Ryan Oksenhorn, Co-Founder and Head of Software at Zipline, commented on the scale of their operations, “Over the past decade, we’ve worked hard to build a system that scaled to 1 million paid customer deliveries. In the near future, I believe that 1 million deliveries will be unremarkable as we reach a million deliveries in a year, in a month, in a day. Ten years from now, I think clean, reliable autonomous delivery of goods and services will be available to everyone.”

Zipline’s growth in the U.S. is supported by recent regulatory approvals allowing its drones to operate beyond visual line of sight (BVLOS). The company anticipates that its P2 system will serve over 30 million people across 10 states in the coming years.

Among the new partnerships, the Flynn Group will utilize Zipline for deliveries from Panera Bread in Seattle. Greg Flynn, Founder, Chairman, and CEO of Flynn Group, highlighted the benefits of drone deliveries, stating, “We’re excited to take the guest experience we provide at our Panera Bread restaurants to new heights, literally, thanks to our partnership with Zipline. Delivery delays, especially in metro areas like Seattle, are unpredictable; however, utilizing Zipline’s state-of-the-art drone technology, we’re addressing those challenges and significantly reducing the wait times from when orders are placed, to when guests can enjoy them.”

Similarly, Memorial Hermann Health System will leverage Zipline’s technology for the delivery of specialty prescriptions and medical devices directly to patients’ homes. “As a system, we are continuously seeking ways to improve the patient experience and bring greater health and value to the communities we serve,” said Alec King, Executive Vice President and Chief Financial Officer of Memorial Hermann.

Jet’s Pizza will begin drone deliveries in Detroit, with John Jetts, CEO of Jet’s Pizza, emphasizing the quality and freshness of their product delivery. “Having the best pizza in the world doesn’t matter if it doesn’t arrive fresh from the oven. Zipline will let us expand our delivery area to bring great, hot food to even more of our loyal customers,” Jetts explained.

This expansion aligns with a growing demand for consistent, convenient delivery options in the U.S., a market that has seen meal deliveries grow by over 350% since 2019. Zipline’s impact extends beyond convenience; its 2023 Impact Report reveals significant contributions to lowering maternal mortality rates and providing faster access to vaccines globally.

**12 . Date: 14-05-2024ISR / ISTAR - Market - SwissDrones Secures Over $10 Million in Series B Funding to Enhance Aerial Intelligence SolutionsURL: https://dronelife.com/2024/05/14/swissdrones-secures-over-10-million-in-series-b-funding-to-enhance-aerial-intelligence-solutions/**

Investment to Boost Global Expansion and Technological Capabilities in Unmanned Helicopter Systems

SwissDrones, a leading aerial intelligence company, has successfully closed its Series B equity growth funding round, amassing over USD 10 million. This significant financial boost comes from a diverse group of investors, including aviation-focused DiamondStream Partners, Chevron Technology Ventures, Ingleside Investors, and continued support from existing shareholders. The transaction was finalized on April 2, 2024.

The funds from this round will be utilized to enhance SwissDrones’ integrated offerings that combine long-range unmanned helicopters, aviation-grade flight operations, and large-scale data analytics. These solutions are crucial for applications such as public safety, search and reconnaissance, and infrastructure inspection on a global scale.

Ulrich Amberg, CEO of SwissDrones, expressed his enthusiasm about the partnership with high-profile investors, stating, “We are excited to close this round with such high caliber investors now joining our growth journey. The proceeds will be deployed to further expand our global footprint to address the tremendous market demand for our integrated solutions from corporates and public sector entities around the world.”

Jim Gable, Vice President of Innovation in Chevron’s Technical Center and President of Technology Ventures at Chevron, highlighted the strategic fit of SwissDrones within Chevron’s investment portfolio. “With a solution that is designed to gather data more efficiently at lower cost and with less risk to workers, SwissDrones can enable advanced field operations and improved safety,” he said. “This is the latest investment from our Core Fund, which focuses on high-growth startups and breakthrough technologies that have the potential to improve Chevron’s core oil and gas businesses, as well as create new opportunities for growth. We welcome SwissDrones to the portfolio.”

SwissDrones has established itself as a key provider of aerial intelligence solutions, enhancing operational efficiency, cost-effectiveness, and sustainability in sectors like energy infrastructure, emergency & safety, and environmental management. This funding round marks a pivotal step in the company’s expansion and technological advancement.

**13 . Date: 24-06-2024ISR / ISTAR - Tactical - Partnership - PayloadPrimoco UAV and T-Mobile Czech Republic Collaborate on UAV-Based Mobile Network Coverage for Crisis SituationsURL: https://dronelife.com/2024/06/24/primoco-uav-and-t-mobile-czech-republic-collaborate-on-uav-based-mobile-network-coverage-for-crisis-situations/**

Primoco UAV SE and T-Mobile Czech Republic have successfully integrated an LTE network BTS base station into the Primoco UAV One 150 unmanned aerial vehicle. This collaboration aims to significantly reduce mobile network recovery time during emergencies, with potential applications across the European Union.

Current mobile crisis communication solutions often rely on ground vehicle-based systems, which can be impractical or too slow to deploy in emergencies like fires, floods, and windstorms. By integrating a BTS station into the Primoco UAV One 150, which can carry up to 30 kg of equipment, these limitations are addressed. The aircraft meets all European civil, military, and safety regulations and is approved for operation in nearly ten EU countries.

Ladislav Semetkovský, CEO of Primoco UAV SE, highlighted the importance of this cooperation: “Crisis management support is one of our main product lines. Unmanned technologies enable rapid deployment in places where it is needed, and we see many opportunities for similar deployments in the Czech Republic, be it large-scale fires, tornadoes, or floods. Co-operation with T-Mobile fits perfectly into this system, as communication in affected areas is one of the key services that must be provided in the event of an emergency. Together with T-Mobile specialists, we integrated a new generation BTS station into our aircraft and verified the capabilities of this solution during a series of multiple-hour test flights. The entire system can be deployed anywhere in the European Union, as our aircraft fully complies with European regulations and the BTS payload does not affect the key parameters of its operation and safety.”

Using UAVs for mobile signal coverage can be essential in ensuring mobile network operation in affected areas. This solution can also provide temporary coverage in locations where new construction or densification of base stations is not allowed. Jaroslav Holiš, Research & Development Senior Manager at Deutsche Telekom, overseeing the project for T-Mobile, stated: “Our solution, developed together with Primoco UAV, is quite unique in Europe. It can fundamentally help the work of the integrated rescue system and the army has also shown interest in it. But we’re still at the beginning. We have a workable concept, but we need to set up regulation within Europe and we are also starting to discuss synergies with EU governments to finance the operation of this solution.”

The Primoco UAV One 150, equipped with 8 kilograms of T-Mobile’s equipment, operates at altitudes of one to two kilometres. The UAV takes off and lands autonomously, with testing conducted at the Písek – Krašovice airport. Depending on the take-off weight, the UAV can stay airborne for up to 15 hours.

**14 . Date: 17-07-2024ISR / ISTAR - Mini - General - NavigationNew Receptor AI System Boosts Autonomous Navigation and Image Recognition for GNSS-Denied EnvironmentsURL: https://dronelife.com/2024/07/17/quantum-systems-enhances-reconnaissance-drone-capabilities-in-ukraine-with-ai-upgrade/**

German reconnaissance drone developer Quantum Systems recently announced that they had recently begun testing an upgrade to their “Receptor AI” multi-sensor system in Ukraine. This Jetson Orin Nvidia powered-AI system includes several sensors for the Vector reconnaissance drone that allow for enhanced autonomous obstacle avoidance and image recognition, allowing the Vector to complete complex reconnaissance missions independently.

Due to the increasing importance of maintaining reliability in difficult GNSS-denied environments, this new upgrade provides new options for signal-independent positioning of reconnaissance drones, vastly increasing their GNSS denied capabilities. According to the press release, the new module is being tested and further developed at the company’s recently opened development site in Ukraine.

“We are implementing the upgrade without any weight changes and with the same range,” says Daniel Kneifel, Director of Software Engineering at Quantum Systems. “We are designing these adaptations without fundamental changes to the existing platform architecture.”

The Vector is specially designed as a long-range reconnaissance drone for both commercial and government clients. In 2022, Quantum Systems announced that it had signed an acquisitions deal with the Ukrainian Ministry of Defense to send Vectors to aid in the ongoing conflict. Producing very little noise in flight, the Vector is designed to be easily integrated into existing operations, requiring only 4 days of additional training to operate effectively in the field. When deployed, it streams high-definition video over an encrypted stream, providing enhanced situational awareness in difficult conditions.

Other projects have included wildlife conservation efforts in Peru, where they partnered with Wilderness International to use their commercial F90+ to take high-definition photos of vulnerable forest ecosystems. This allows the nonprofit organization to monitor over 5 million square meters of jungle for threats such as poaching or illegal deforestation, continued threats to the regions biodiversity.

**15 . Date: 27-08-2024Regulation - Event 38 Drone Secures BVLOS Waiver for Pipeline InspectionURL: https://dronelife.com/2024/08/27/event-38-drone-secures-bvlos-waiver-for-pipeline-inspection/**

Event 38 Unmanned Systems has announced the approval of a drone service provider’s waiver for beyond the visual line of sight (BVLOS) operations. This approval, granted by the Federal Aviation Administration (FAA), allows the use of Event 38’s E455 fixed-wing VTOL drone over more than a hundred miles of pipeline.

This collaboration marks a significant step forward in pipeline inspection and maintenance. The E455 drone, designed to operate efficiently over long distances, ensures extended flight times due to its all-electric VTOL design. The streamlined construction of the drone further simplifies both operations and maintenance, providing a cost-effective and reliable solution for the service provider.

The approval of the BVLOS waiver is a key milestone for Event 38 and the drone service provider. It enhances the capability to inspect pipelines more effectively, with greater safety and efficiency. The E455 drone’s ability to carry “Detect and Avoid sensors and meaningful payloads for an extended duration demonstrates the full capability of the E455,” said Jeff Taylor, Founder and CEO of Event 38.

The BVLOS waiver is not only a technical achievement but also a reinforcement of the commitment to leveraging advanced technology for improved operational outcomes. Ensuring compliance with regulatory standards remains a priority in this effort.

Event 38 Unmanned Systems, based in Richfield, Ohio, designs and manufactures fixed-wing VTOL drones. Established in 2011, the company has sold over 500 drones globally, serving various industries. These drones are customizable for high-resolution aerial photogrammetry, thermal and multispectral imagery, LiDAR, and live video streaming.

**16 . Date: 24-09-2024Market - Quantum Systems Secures Over €100 Million in Series B FundingURL: https://dronelife.com/2024/09/24/quantum-systems-secures-over-e100-million-in-series-b-funding/**

Quantum Systems, a key innovator in drone technology, has successfully raised over €100 million through an additional Series B funding round. The latest investors, Notion Capital and Porsche Automobil Holding SE (Porsche SE), have joined existing stakeholders in demonstrating their support for the company’s growth and vision.

This funding round highlights the confidence that Quantum Systems’ investors have in the company’s ability to expand in the rapidly growing drone technology market.

The infusion of new capital enables Quantum Systems to push forward with its global expansion plans while investing further in research and development, particularly in artificial intelligence (AI) and software innovations. These advancements are crucial as the company aims to scale up production and strengthen its product offerings.

Patrick Norris, General Partner at Notion Capital, commented on the investment: “Florian is a highly driven founder, motivated to defend European values. In such an uncertain world, we all need more homegrown success stories like Quantum Systems to make a difference and have an impact beyond economic profit.”

Florian Seibel, CEO and Co-Founder of Quantum Systems, emphasized the importance of the new partnerships: “With support from our new investors Porsche SE and Notion, we are not just securing funds; we are building partnerships that will drive innovation essential for Europe’s technological sovereignty, security and resilience.”

Quantum Systems specializes in providing aerial intelligence through advanced drone technology equipped with AI capabilities. This technology has transformed operations across industries like mining, construction, agriculture, utilities, public safety, and defense. By capturing, analyzing, and processing sensor data, Quantum Systems’ drones offer a significant efficiency boost to these sectors.

The drone market continues to grow, with compact drones forecasted to expand at an annual rate of 20 percent over the next several years. Quantum Systems is positioned to benefit from this growth due to its unique technology platform, which integrates hardware, software, and AI to deliver cutting-edge solutions for various applications.

The new round of funding will allow Quantum Systems to scale production and continue its focus on innovation. The company’s commitment to further research in AI-driven technology ensures that it remains at the forefront of the drone industry.

Seibel expressed his gratitude for the support from investors, while referring to the company’s work to support Ukraine: “This investment underscores the confidence in our mission to redefine industries and create lasting impact. I am grateful to all our investors who have supported us on this journey – the best is yet to come. But one thing is certain: without security, nothing is worth anything.”

As Quantum Systems moves forward with its global expansion and technological development, the company remains focused on contributing to Europe’s technological sovereignty while providing valuable solutions to businesses and governments alike.

**17 . Date: 26-09-2024General - Drone Swarms to the Rescue: Windracers Pioneers Autonomous Wildfire ResponseURL: https://dronelife.com/2024/09/26/drone-swarms-to-the-rescue-windracers-pioneers-autonomous-wildfire-response/**

As large, destructive wildfires proliferate across the planet, firefighting agencies are increasingly turning to artificial intelligence and drone technology to help in battling the blazes.

One day in the not-too-distant future a fleet of some 20 autonomously operated UAVs, taking off from two or three different bases, could operate in concert with one another to cover a large area, predicting where new fires are likely to start, pinpointing the location of blazes that are already under way and distributing fire-retardant material onto an inferno before it gets too badly out of control.

“The challenge from an environmental protection point of view, is how do you stop wildfires from developing into the uncontrollable phenomena that are very difficult to put out,” said Nickolay Jelev of Windracers, a UK-based developer of self-flying cargo aircraft.

With the onset of global warming, nations across the world are experiencing a dramatic increase in the development of large, destructive fires. In the U.S. alone, as of September 23, there were 42 large active wildfires being managed with full suppression strategies, according to a report by the National Interagency Fire Center.

“Current wildfires have burned 1,656,005 acres. Almost 15,056 wildland firefighters and support personnel are assigned to incidents, including 15 complex and two type 1 incident-management teams, 323 crews, 605 engines and 99 helicopters,” the report states.

To demonstrate how drones can become part of the firefighting arsenal, Windracers recently completed a series of wildfire-mitigation tests with the Lancashire Fire and Rescue Service, said Jelev, Windracers’ R&D programs manager. The tests were part of a larger project to demonstrate the effectiveness of drones equipped with AI technology developed by the University of Sheffield.

The drones have been taught to engage in “swarm” behavior, using technology developed by the University of Bristol. The swarm system allows the unmanned aircraft to communicate and interact with one another, in the same way that a school of fish or a swarm of bees can move together as one unit to avoid predators or to achieve a goal.

For the Lancashire testing program Windracers employed its Ultra drone, a large fixed-wing propeller-driven unmanned aircraft, with a maximum takeoff weight of 450 kilograms (992 pounds). The Ultra has a significant range: it’s configured to fly 1,000 kilometers (about 620 miles), and has a six- to eight-hour flight endurance.

“Our simulations have shown that 20 to 30 of those aircraft can cover a sizeable area, something the size of California,” Jelev said. Windracers envisions that ultimately the aircraft will be able to be programmed to fly autonomously, without direct human intervention.

“Right now, we are at a phase where they fly pre-programmed routes that are monitored by an operator. The operator doesn’t touch the controls during the flight but he or she monitors the progress of the aircraft while it’s flying a pre-programmed route,” he said.

To date, the bulk of Windracers’ research has been concentrated in the UK, although it has incorporated other fire-fighting agencies from foreign countries, such as the Hellenic Fire Service of Greece, into its research programs.

Earlier this month Windracers announced that Team Windracers Environmental was one of 29 international teams selected to compete in the XPRIZE Wildfire Track B competition. The next round of the competition will allow Windracers to demonstrate its firefighting capability in the U.S. in 2025 and 2026, Jelev said.

Although the specific strategies for containing wildfires vary widely from country to country and even between different jurisdictions within the same country, certain basic concepts for managing wildfires in their initial stages remain constant: predicting when and where a fire is likely to breakout, pinpointing the exact location of a fire at its beginning, and rapidly delivering fire-fighting material to extinguish the blaze before it grows to unmanageable proportions.

Using AI technology combined with drone-captured thermal and optical imaging, Windracers is able to accurately predict where a wildfire is likely to ignite.

“When you have a set number of days where the temperature and humidity levels are at a certain point, you know that the likelihood of a fire is much higher than when it’s below those thresholds,” Jelev said. So, on days where there is a high likelihood of a wildfire occurring, the fire-fighting team would deploy a large number of aircraft, a swarm, above an area seen as high-risk to monitor and look for small fire outbreaks.

If a fire is detected within the large search area, the next piece of the puzzle is about pinpointing the locating of the fire. The third component of drone-based firefighting is using swarm technology to put out the fire.

Because the Ultra drones require runway of 300 meters (984 feet), Jelev said Windracers envisions locating the aircraft at two or three different airfields from which they could be launched in order to cover a wide area.

“Once you have 15 or 20 of those aircraft airborne monitoring an area, you can then pull those aircraft together. You can concentrate on that fire effectively and acting as a swarm put it out or bring it under control,” he said.

Jelev said that too often when a headline mentions drones, it is in regard to their use in warfare, or in some other negative connotation. That why he thinks developing a drone-based firefighting system is such an exciting project.

“Its focus has really been around the drones for good, what the drones can do to help humans and enable a better outcome for society,” he said. “It’s something that we’re truly proud of as a company, that we’re working in this space.”

**18 . Date: 07-11-2024General - ideaForge Reaches 550,000 UAV Flights, Driving India’s Drone Manufacturing GoalsURL: https://dronelife.com/2024/11/07/ideaforge-reaches-550000-uav-flights-driving-indias-drone-manufacturing-goals/**

In a significant achievement for India’s drone industry, ideaForge has crossed 550,000 successful UAV flights, with one of its drones taking off every four minutes. This milestone highlights ideaForge’s commitment to localizing drone technology and aligns with India’s aim to become a global drone hub by 2030. The company has localized nearly 70% of its critical drone components, marking substantial progress in indigenous production and technological independence.

Since its founding, ideaForge has focused on developing homegrown solutions. In 2007, when India’s drone ecosystem lacked critical subsystems, ideaForge created its own autopilot system, preceding open-source systems like ArduPilot. The company’s commitment to building local technology has led to a robust stack of UAV systems, including custom payloads, communications, and embedded systems tailored for defense, military, and surveillance purposes.

The company avoids sourcing intelligent components from countries of concern to maintain a secure and reliable supply chain. Its technology portfolio includes a range of UAVs, from fixed-wing vertical takeoff and landing (VTOL) drones to drones designed for traffic monitoring.

ideaForge UAVs are deployed in diverse settings, from border security and wildlife conservation to mining and industrial mapping. Recently, the company introduced new service models, such as the FLYGHT Drone-as-a-Service for traffic monitoring and public safety. It has also developed drones specifically for volumetric estimation in mining and surveillance of critical infrastructure.

Support from India’s Production-Linked Incentive (PLI) scheme has further strengthened ideaForge’s R&D and manufacturing capabilities. This initiative aligns with India’s Atmanirbharta (self-reliance) mission, helping the company reduce reliance on imports and contribute to building a domestic ecosystem for drone manufacturing. ideaForge’s technology base includes 78 patents in UAV payloads, communication systems, and hybrid fixed-wing drones, among other advancements.

ideaForge allocates around 22% of its annual revenue to product and technology development. Additionally, half of its workforce is dedicated to advancing its UAV systems, covering hardware, software, and autopilot technology. The company’s in-house capabilities span a broad range of technology, from control systems and zoom payloads to customized drones for GIS mapping and volumetric surveys used in sectors such as mining, forestry, and border security.

As ideaForge drives forward with its UAV development, it reinforces its commitment to innovation, security, and scalability. The company’s work contributes to empowering India’s civil, defense, and industrial sectors with reliable drone technology.

**19 . Date: 14-11-2024Partnership - WingXpand Announces Partnership with Raytheon and New VTOL Capability for Defense and Civil MissionsURL: https://dronelife.com/2024/11/14/wingxpand-announces-partnership-with-raytheon-and-new-vtol-capability-for-defense-and-civil-missions/**

WingXpand, an autonomous smart plane manufacturer based in St. Louis, Missouri, has announced a new collaboration with Raytheon, an RTX business known for its defense technology. This collaboration aims to advance capabilities in threat detection and operational flexibility for defense and civil applications. Additionally, WingXpand introduced a Vertical Takeoff and Landing (VTOL) option for its xRAI™ smart plane, making it suitable for compact and challenging environments.

Under a U.S. Army contract, WingXpand’s partnership with Raytheon focuses on enhancing real-time threat identification. WingXpand’s smart planes, already equipped with an array of AI-driven algorithms, identify potential threats automatically, providing critical information to soldiers on the ground. This real-time intelligence capability enables quick responses and informed decision-making in dynamic situations.

WingXpand’s adaptable system architecture enables the integration of various applications and payloads. As technology and mission needs evolve, this flexibility allows WingXpand to continue adapting to new defense requirements. Raytheon’s expertise, particularly in the infrared spectrum, enhances these capabilities. “By leveraging this state-of-the-art Infrared AI algorithm, soldiers can receive and share information in real-time that precisely identifies potential threats,” WingXpand states, highlighting the critical role of Raytheon’s technology in enhancing the situational awareness and safety of tactical units.

The integration of Raytheon’s advanced infrared technology with WingXpand’s AI-driven threat detection is expected to transform how the Army executes surveillance and reconnaissance missions, particularly in high-stakes environments.

In addition to the Raytheon collaboration, WingXpand unveiled a new Vertical Takeoff and Landing (VTOL) feature for its xRAI™ smart plane, designed for challenging environments and limited space. The xRAI™, which expands from a backpack, can now launch vertically, offering more flexibility in tight spaces. This new capability enhances the smart plane’s portability and responsiveness, making it suitable for defense, public safety, and infrastructure monitoring.

The VTOL function, paired with the xRAI’s lightweight design, allows it to be deployed rapidly in diverse situations. “By combining VTOL functionality with its lightweight, portable design— xRAI delivers unmatched flexibility and rapid response for defense, public safety, and critical infrastructure missions,” WingXpand states.

WingXpand’s adaptability has also attracted attention from key defense and civil organizations. The company recently won the U.S. Army’s xTechSpecialForces competition, highlighting the impact of its customizable and mission-critical technology. This award reflects WingXpand’s ongoing commitment to providing solutions for evolving defense and security needs.

Founded in 2022, WingXpand has quickly gained traction with its backpack-expandable smart plane, designed to meet diverse needs, from agricultural efficiency to disaster response and tactical missions. With the ability to carry up to ten times the weight and fly five times longer than traditional quadcopters, WingXpand’s technology bridges the gap between compact size and high endurance. The company works with the U.S. Army, Air Force, Navy, and various civil organizations, and it has backing from Techstars in partnership with the U.S. Space Force and NASA’s Jet Propulsion Laboratory.

**20 . Date: 19-11-2024Cargo - Tactical - Partnership - Rotor Technologies and AG-NAV Announce Partnership to Automate Aerial Applications with Sprayhawk HelicopterURL: https://dronelife.com/2024/11/19/rotor-technologies-and-ag-nav-announce-partnership-to-automate-aerial-applications-with-sprayhawk-helicopter/**

Rotor Technologies, Inc. and AG-NAV Inc. have announced a collaboration to integrate AG-NAV’s precision navigation and flow control technology into Rotor’s Sprayhawk unmanned helicopter. The partnership aims to enhance precision and efficiency in aerial applications for agricultural operators.

The Sprayhawk is a 110-gallon capacity unmanned agricultural UAV based on the Robinson helicopter platform. It is recognized as the world’s largest spray drone. The 2025 model will feature AG-NAV’s advanced navigation systems, including the Guia Platinum terminal and variable rate spray control equipment, as standard components.

“The integration of AG-NAV systems into the Sprayhawk brings precision agriculture to our aerial application customers,” said Charlotte Keys, Rotor Product Manager. “With access to AG-NAV’s industry-leading navigation and mission management systems, Sprayhawk operators will be able to seamlessly manage their jobs and workflows, perform in-flight spray controls just like in their manned aircraft, and optimize efficiency with precision flow control.”

This collaboration will also provide operators access to AG-NAV’s AgMission software. AgMission enables users to create precise spray patterns, customize settings for specific operations, and analyze data from previous jobs to optimize performance.

Safety and innovation are central to the partnership. AG-NAV emphasizes these priorities in their approach to advancing aerial application technology.

“At AG-NAV our mission is to always innovate as well as focus on pilot safety,” said Landon Ramirez of AG-NAV. “So when we heard what Rotor were doing, we were really excited to work with them to further improve pilot safety as well as revolutionize the aerial application industry.”

The 2025 Model Year Sprayhawk is now available for pre-orders in the U.S. and Brazil. Customers placing orders before December 15, 2024, can take advantage of introductory pricing, with deliveries expected in the second half of 2025.

Rotor Technologies and AG-NAV will showcase the Sprayhawk and its integrated systems at the NAAA Convention in Fort Worth, Texas, from November 18-21. Visitors can find Rotor at booth 1523 and AG-NAV at booth 1600.

Rotor Technologies, based in Nashua, NH, specializes in heavy-lift drones for agricultural and utility applications. For more information about the Sprayhawk or to place an order, visit Rotor’s website.

AG-NAV Inc., headquartered in Barrie, Ontario, Canada, has over 20 years of experience in navigation and flow control technology. Their solutions serve agriculture, forestry, and other aerial industries. Learn more at AG-NAV’s website.

This collaboration marks a significant advancement in precision agriculture, showcasing how unmanned systems can enhance efficiency and safety in aerial applications.

**21 . Date: 09-01-2025General - Phoenix Air Unmanned Completes 320-Mile Pipeline Patrol in Single DayURL: https://dronelife.com/2025/01/09/phoenix-air-unmanned-completes-320-mile-pipeline-patrol-in-single-day/**

Phoenix Air Unmanned (PAU) has announced the successful completion of a 320-mile pipeline patrol in just 7.6 flight hours using a single unmanned aircraft system (UAS). Conducted for Shell Pipeline Company (SPLC) in Louisiana, the achievement surpasses the project’s goal of patrolling 300 miles in a single flight day. The flights were performed under PAU’s nationwide beyond visual line of sight (BVLOS) regulatory approval, showcasing advancements in critical infrastructure inspection.

The patrols were conducted under a certificate of waiver from the Federal Aviation Administration (FAA). This waiver allows BVLOS flights without the need for visual observers, enabling broader inspections of infrastructure like pipelines, utilities, railroads, and canals. Since 2019, PAU has inspected over 16,000 miles of linear infrastructure under multiple authorizations.

In Fall 2024, PAU received a new FAA waiver supporting scalable and repeatable BVLOS operations. Will Wheeler, Director of Operations for PAU, explained the significance: “Many FAA authorizations are site-specific or limited in scope due to restrictive criteria. We built upon years of BVLOS operations and proposed a viable alternative to traditional pipeline patrol methods. This authorization solidifies the business case for routine UAS inspections required for regulatory compliance, as we achieved a substantial increase in assets patrolled beyond visual line of sight with UAS.”

The milestone supports ongoing FAA validation of UAS technology, emphasizing the safety and public benefits of advanced drone operations.

For the patrol, PAU used the Event 38 E455 UAS, a fixed-wing drone equipped with vertical takeoff and landing capabilities. Weighing under 55 pounds, the aircraft carried a high-resolution camera providing live video feeds. In 16 BVLOS flights, PAU logged 7.72 hours and covered 332.4 miles, including right-of-way transit and check flights.

Careful mission planning ensured the patrols stayed within designated rights of way across southern Louisiana. Real-time video data collected during the flights was provided to inspectors and archived for further analysis.

PAU credits its success to extensive safety risk analysis, rigorous FAA approvals, and close coordination with SPLC and aviation teams. The patrol demonstrates the potential of UAS for improving efficiency and scalability in infrastructure inspections.

Founded in 2014, Phoenix Air Unmanned specializes in utility inspection services and has conducted over 16,000 miles of unmanned linear infrastructure inspections. The company leverages BVLOS operational experience, FAA authorizations, and project management expertise to deliver innovative solutions.

In 2021, PAU became the first registered operator of the International Standards for Business Aircraft Operations (IS-BAO) Stage 1 for remotely piloted aircraft systems, further solidifying its commitment to aviation safety and excellence.

**22 . Date: 17-01-2025Fixed Wing - Cargo - MALE - General - PlatformWindracers Introduces ULTRA MK2 Cargo UAV: More Power, Payload, and EfficiencyURL: https://dronelife.com/2025/01/17/windracers-introduces-ultra-mk2-cargo-uav-more-power-payload-and-efficiency/**

Windracers has unveiled its latest self-flying cargo aircraft, the ULTRA MK2, at a launch event in London. Designed to enhance middle-mile logistics, the ULTRA MK2 offers double the power output, a 50% increase in payload capacity, and a significant reduction in fuel costs compared to its predecessor.

“The launch of ULTRA MK2 is proof that Windracers has moved rapidly from an idea to a commercial organisation that is meeting the needs of customers today,” said Stephen Wright, Founder and Group Executive Chairman of Windracers.

The ULTRA MK2 cargo drone is designed for diverse applications, from humanitarian aid to environmental protection. It carries a payload of up to 150 kg and operates autonomously over distances of up to 1,000 km. The platform’s capabilities include detecting, dropping, and delivering in challenging conditions, supported by the proprietary Windracers Autopilot™system.

Simon Thompson, Group CEO of Windracers, emphasized the efficiency gains: “In ULTRA MK2, we have halved our operational fuel cost per kilogram and we will find even more efficiency in the future for our customers.”

The launch event included insights from ULTRA MK2 customers. NORCE’s Rune Storvold explained how the UAV would support Antarctic climate research by carrying radar systems. Benoit Gaborit of Aviation Sans Frontieres highlighted its role in integrating drones into humanitarian supply chains.

Windracers has conducted extensive BVLOS (beyond visual line of sight) operations in extreme environments, including the Orkney Islands, Antarctica, and Ukraine. The UAV is part of the UK Ministry of Defence UAV support program and has been used for ISR (intelligence, surveillance, and reconnaissance) and resupply missions.

The ULTRA MK2’s design reduces the need for pilot oversight, making it a cost-effective solution for logistics, defense, and environmental applications. Its launch comes as governments and logistics companies increasingly adopt autonomous flight technologies. The UK Government’s creation of a Regulatory Innovation Office underscores the growing importance of such advancements.

Windracers’ ULTRA MK2 demonstrates a commitment to addressing logistical challenges with a focus on affordability and practicality. With applications in defense, humanitarian aid, and environmental monitoring, the ULTRA MK2 continues to expand its reach across industries and geographies.

**23 . Date: 22-01-2025Component - Partnership - PayloadDrones Bring Mobile Signal Boost to the EU: T-Mobile and Primoco UAV SE Team UpURL: https://dronelife.com/2025/01/22/drones-bring-mobile-signal-boost-to-the-eu-t-mobile-and-primoco-uav-se-team-up/**

T-Mobile Czech Republic and Primoco UAV SE have partnered to create a drone-based mobile signal booster, marking the first deployment of this technology in Europe. The collaboration aims to provide mobile signal coverage in areas where traditional ground-based infrastructure is unavailable or impractical.

The system will debut during the upcoming Jizerska 50 cross-country ski race, showcasing its potential for both emergency and commercial use. This innovative solution offers a new approach to signal propagation by using drones equipped with mobile microstations, eliminating the need for ground transmitters.

“This technology has great potential not only in emergency situations such as fires, earthquakes, or floods,” said Vladan Peković, CTIO of T-Mobile Czech Republic. “It can also bring extensive opportunities for commercial use — with the growing popularity of mass sporting or cultural events in the countryside, there is a growing need for temporary signal reinforcement during such events.”

The drone system is particularly valuable in remote or legally protected areas where permanent ground transmitters cannot be installed. The Primoco One 150 drone, manufactured in the Czech Republic, carries a mobile transmitter capable of connecting to either a dedicated local network or directly to the live network core via satellite. This flexibility makes the technology suitable for both emergency services and large-scale public events.

The Primoco One 150 is equipped to operate at altitudes of up to 3,300 meters and has a range of 1,800 kilometers. It can stay airborne for up to 15 hours and provide mobile signal coverage to areas up to 20 square kilometers. A single drone can serve up to 1,000 active users, ensuring reliable connectivity for 4G and 5G-enabled devices.

“This year, we will start constructing a new production facility with a capacity of 250 drones per year to meet the growing demands of multinational partners such as Airbus Defence,” said Ladislav Semetkovsky, CEO of Primoco UAV SE. He added, “We see the partnership with T-Mobile and the Deutsche Telekom Group as a great opportunity to bring the potential offered by drones to the benefit of the majority of the population, whether it be for emergencies or large commercial events.”

This project, supported by the Deutsche Telekom Group, positions the Czech Republic as a hub for innovative telecommunications technology. “We are very pleased that this innovative project sponsored by the Deutsche Telekom Group is taking place in the Czech Republic,” said Jaroslav Holiš, Research & Development Senior Manager at Deutsche Telekom. “We are already discussing with relevant EU government departments to offer the technology to support their emergency services or defence forces.”

Primoco UAV SE, a publicly traded company on the Prague Stock Exchange, continues to expand its footprint with over 200 aircraft operated across four continents. The company’s partnership with T-Mobile reflects the growing demand for drone technology in both civilian and defense sectors.

**24 . Date: 03-02-2025Hybrid Rotary / Fixed Wing - ISR / ISTAR - Mini - General - PlatformCensys Technologies Introduces Sentaero 6: Advancing Over-the-Horizon BVLOS OperationsURL: https://dronelife.com/2025/02/03/censys-technologies-introduces-sentaero-6-advancing-over-the-horizon-bvlos-operations/**

Censys Technologies has unveiled the Sentaero 6, a new uncrewed aerial system (UAS) designed to push Over-the-Horizon Beyond Visual Line of Sight (OTH BVLOS) operations forward. Built with customer input and regulatory insight, this latest model aims to provide a more capable and efficient solution for asset intelligence.

Since 2021, Censys Technologies has worked to expand BVLOS operations in the United States. The company started with three-mile, geo-constrained approvals requiring visual observers and has progressed to nationwide approvals, where the Sentaero 5 can operate up to 40 miles one-way without observers.

“Now, the Sentaero is in a position of regulatory acceptance where operators can truly capture the value and efficiency of OTH BVLOS operations,” explained Rob Knochenhauer, Director of Regulatory Affairs at Censys Technologies. “What our clients and the industry need is a more capable aircraft to best capitalize on this trend. That’s why we developed Sentaero 6.”

Traditional OTH inspections, mapping, and surveying have long been constrained by the need for one pilot per aircraft and airport proximity. The Sentaero 6 offers a solution with its two-hour endurance, increased payload capacity, and integrated artificial intelligence. Its 90-mile command and control (C2) range\* enables operators to perform larger, more complex missions with greater efficiency.

The company plans to expand Sentaero 6 operations to include swarm technology, allowing one operator to control multiple aircraft, and fully remote operations. These capabilities will enhance data collection speed and quality. Additionally, safety improvements include the elimination of single-point failures and the integration of an ASTM-certified parachute for urban operations.

The Sentaero 6 is equipped with an onboard computer that supports Censys Technologies’ CensWise software. This AI/ML-powered platform starts processing collected data mid-flight, transforming raw information into actionable intelligence faster than traditional methods.

“At Censys Technologies, we’re working to bring our customers closer to omniscience, and the Sentaero 6 is a testament to our resolve,” said Trevor Perrott, CEO of Censys Technologies. “With this platform, we’re not just offering a drone; we’re providing a comprehensive solution that acquires data, converts it to an intelligence dashboard, and enables users to prevent and solve problems at an accelerated pace.”

The real advantage of the Sentaero 6 lies in its ability to integrate drone capabilities with onboard AI-powered analytics. “The real benefit of the Sentaero 6 lies not in its endurance, size, payload capacity, or integrations, but in the seamless combination of drone capability and onboard processing that delivers actionable asset intelligence faster, more accurately, and safely,” said Perrott. “It’s the ability to capture data over vast distances and urban environments with unparalleled precision while processing it in real-time that truly transforms operations. By integrating AI-powered analytics directly onto the drone, CensWise software begins processing data while in the air, reducing the time between data collection and actionable insights. This allows asset owners to make informed decisions in real-time, preventing issues before they become costly problems.”

As the U.S. works to secure its UAS supply chain and expand domestic drone manufacturing, Censys Technologies represents a strong example of a U.S.-based drone company making significant advancements. The company’s fixed-wing aircraft have a proven track record in the field and have repeatedly received FAA waivers for BVLOS flight. These regulatory approvals highlight the growing acceptance of BVLOS operations and their increasing role in industrial drone applications.

**25 . Date: 06-02-2025Component - General - DatalinkCucuyo and Cavok UAS Successfully Complete Flight Tests for Laser Communication TerminalURL: https://dronelife.com/2025/02/06/cucuyo-and-cavok-uas-successfully-complete-flight-tests-for-laser-communication-terminal/**

A total of twelve tests were performed to assess the integration and performance of the P-100 terminal. These evaluations followed extensive physical and mechanical integration phases, simulating real-world operational conditions. The flight tests were carried out in collaboration with Cavok UAS France, Cavok Spain engineers, and experienced test pilots.

Spain was chosen as the test location due to its optimal conditions for assessing performance. The results met all predefined objectives and exceeded expectations, providing a strong foundation for the next phase of technical development. Future tests will focus on further improving the robustness of the data link.

Cucuyo’s laser communication technology for drones offers several major advantages over traditional radio frequency (RF) systems:

Laser communication provides significantly higher data transmission speeds compared to RF systems. Cucuyo’s P-100 laser terminal achieves a bidirectional data rate of 1 Gbps over distances up to 40 km. This allows for the transmission of large amounts of data from onboard sensors much more quickly and efficiently.

Laser communication offers superior security features:

Unlike RF systems, laser communication does not require country-specific frequency licenses from regulatory bodies like the ITU. This makes deployment easier, faster, and more cost-effective, especially for international operations.

“We are thrilled with the outcomes of these flight tests. They not only validate the robustness of the integration process but also set the stage for the next critical milestones in our innovation journey. We look forward to the upcoming tests with the updated Cucuyo P-100 terminal, which will bring us one step closer to creating a fully operational solution,” said Fabrice Parodi, CEO of Cavok UAS.

Dr. Markus Knapek, CTO & Managing Director of Cucuyo, also highlighted the significance of the test results: “The results of these flight tests, which we obtained thanks to our partner Cavok UAS, are invaluable for the validation of our product. The data has already been evaluated by our specialists and will enable us to optimize the operational concepts and our P-100’s link stabilization system.”

Cucuyo develops laser-based communication products designed for various applications. The company aims to bring laser communication terminals to market as off-the-shelf products. The P-100 terminal is specifically designed for small UAVs, optimizing power consumption, weight, and data rate. Laser communication offers up to 50 times the data rate of traditional radio frequency links while preventing jamming, spoofing, or interception. This makes it particularly effective for UAV operations requiring secure and high-speed data transmission. Cucuyo is headquartered in Pfaeffikon SZ, Switzerland, with a German subsidiary in Krailling near Munich.

Cavok UAS designs and manufactures professional drones, offering both fixed-wing and rotary-wing UAVs ranging from 4 kg to 1,360 kg Maximum Takeoff Weight (MTOW). The company selects equipment based on mission-specific requirements while maintaining safety standards. All production takes place in France, including in-house designed components such as motors and ESCs. Cavok UAS serves global markets in industries including agriculture, cargo delivery, rescue, security, and defense.

**26 . Date: 11-02-2025Hybrid Rotary / Fixed Wing - ISR / ISTAR - Small - General - PlatformHeven Drones Introduces Raider: Hydrogen-Powered UAS for Extended OperationsURL: https://dronelife.com/2025/02/11/heven-drones-introduces-raider-hydrogen-powered-uas-for-extended-operations/**

Hydrogen-Powered Drone Offers Long Endurance and Modular Design for Multiple Mission Profiles

Heven Drones has unveiled the Raider, a hydrogen-powered unmanned aerial system (UAS) designed to provide extended flight endurance, enhanced payload capacity, and modular adaptability. The company will showcase the new platform at IDEX 2025 in Abu Dhabi from February 17-21 at Booth #02-A17.

Designed for Multi-Role Operations

The Raider is engineered to meet a variety of mission requirements, featuring a hydrogen-powered endurance of more than 10 hours and a payload capacity of up to 50 lbs (23 kg). Its modular twin-fuselage design improves aerodynamic stability and enables quick configuration changes without extensive recalibration. Additional features include vertical takeoff and landing (VTOL), rapid assembly within 15 minutes, and a modular battery system for improved hovering capabilities.

“The launch of the Raider reflects our mission to enhance operational capabilities for a broad range of missions,” said Benzion Levinson, Founder & CEO of Heven Drones. “The platform’s ability to deliver long endurance with a high payload capacity, combined with hydrogen-powered sustainability, opens new possibilities for reconnaissance, tactical operations, and logistics. The H2D family of drones have already been validated in operational environments, thus, the Raider is designed to provide reliable performance while offering operators the adaptability needed in today’s dynamic scenarios.”

Stealth and Energy Independence

In addition to endurance and payload capabilities, the Raider offers near-silent operation with low thermal and acoustic signatures, making it well-suited for sensitive missions. Its ability to monitor large areas with multi-platform, multi-sensor configurations enhances its effectiveness for persistent surveillance and force protection. On-site hydrogen generation further supports energy independence, enabling continuous operations in remote or resource-limited environments.

The Raider is designed for applications such as tactical intelligence, surveillance, and reconnaissance (ISR), contested logistics, and air-launch effects. Its engineering focuses on efficiency and reliability, offering over 1,000 operational hours between overhauls. This design minimizes maintenance requirements and enhances operational readiness.

**27 . Date: 13-02-2025Partnership - SoftwareAirbus and Primoco UAV Demonstrate AI-Powered Drone Swarming in Surveillance TestsURL: https://dronelife.com/2025/02/13/airbus-and-primoco-uav-demonstrate-ai-powered-drone-swarming-in-surveillance-tests/**

European aeronautics giant Airbus and Czech company Primoco UAV recently partnered on a series of surveillance flights designed to test how Airbus’ new teaming intelligence software can be used to manage a drone swarm in real time. The tests were conducted at Písek-Krašovice airport using Primoco’s medium-sized UAVs.

In the first test, operators at the Airbus ground station sent two Primoco One 150 UAVs to a target zone. Airbus’ teaming intelligence software then assigned each of the UAVs its own surveillance area. Using AI-based automatic target recognition (ATR) software by Airbus, both aircraft were able to detect threats simultaneously. One of the uncrewed aircraft then localised a simulated threat and sent the geodata of the opposing air defense system to the ground station.

In the second test, the drones were split up and given independent tasks. One UAV was responsible for monitoring the target area and detecting threats with Airbus’ AI-based ATR. The other loitered in the background on standby. Once the first UAV detected an enemy threat, it used the teaming software to task the second UAV to identify the threat (an enemy air defense system) with Airbus’ AI-based ATR and report it to the operators at the ground station. Meanwhile, the first UAV continued monitoring the area for suspected threats.

In the demonstration, Airbus and Primoco also successfully tested the integration of third-party applications other than Airbus’ own ATR, showing how the swarming program is platform agnostic and can be integrated into a wide range of platforms.

Next steps for the partnership include further maturing its teaming intelligence software as a product that can be installed on any fixed-wing, rotary-wing, crewed or uncrewed aircraft available on the market while also including other third party software automated target recognition. While the initial focus of these tests were on military applications, the developers hope third-party app integration could bring the powerful drone management capabilities to spaces like infrastructure inspection.

**28 . Date: 17-02-2025General - Quantum Systems Expands Drone Production in Ukraine Amid Ongoing ConflictURL: https://dronelife.com/2025/02/17/quantum-systems-expands-drone-production-in-ukraine-amid-ongoing-conflict/**

Quantum Systems is increasing its production capacity in Ukraine in 2025, responding to the growing need for advanced drone technology in the ongoing war. The expansion aligns with Ukraine’s broader push to develop its domestic drone industry and strengthen its defense capabilities.

The company, which has production hubs in Brisbane, Los Angeles, Kyiv, and Munich, is scaling operations to ensure rapid deployment of aerial intelligence solutions. Quantum Systems states that its ability to manufacture quickly allows it to meet battlefield demands faster than traditional defense suppliers.

Since the start of the war in 2022, Ukraine has relied heavily on drones for reconnaissance, targeting, and other military operations. The conflict has highlighted how essential drone technology is for modern warfare. Ukraine has also made significant strides in developing its own drone industry, producing both small reconnaissance drones and larger strike-capable systems.

Quantum Systems’ latest expansion aims to strengthen these efforts. “Quantum Systems acts—we don’t wait. Our decision to double production in Ukraine is a direct response to the critical need for cutting-edge drone technology on the battlefield,” said Sven Kruck, Co-CEO of Quantum Systems.

The announcement came during the Munich Security Conference, where Quantum Systems, Minister Herman Smetanin, and Vice-Minister Ganna discussed the importance of maintaining a steady supply of drones. The expansion, they stated, signals ongoing support for Ukraine’s defense.

The U.S. has been a key supporter of Ukraine, providing financial and military aid since the war began. However, with the recent shift in administration, the future of that support is uncertain. President Donald Trump has suggested reevaluating aid to Ukraine, raising concerns among European allies and Ukrainian officials. If U.S. assistance declines, Ukraine may need to rely more on its own manufacturing capabilities and European defense partners.

Quantum Systems’ expansion in Ukraine reflects the broader effort to strengthen domestic production of critical defense technology. As the war continues, Ukraine’s ability to produce drones locally may become even more important.

**29 . Date: 13-03-2025Cargo - General - Zipline Hits 100 Million Miles: A New Milestone in Autonomous Drone DeliveryURL: https://dronelife.com/2025/03/13/zipline-hits-100-million-miles-a-new-milestone-in-autonomous-drone-delivery/**

California-based autonomous drone delivery company Zipline recently revealed that they had achieved a major milestone in their efforts to bring UAV logistics to the masses, announcing that that they had reached 100 million commercial miles flown.

“That’s the same as driving on every road in the U.S. 24 times — with a spotless driving record — or flying to the moon and back 200 times.”, Zipline said in their YouTube video spotlighting the achievement.

Zipline highlighted the increased efficiency, both environmentally and time-wise, that drones offer when compared to traditional delivery solutions, pointing out that every mile was flown without producing emissions and without the time that would otherwise be spent waiting in traffic (over 30 years across all flights, according to their calculations). The system has been used to deliver over 22 million vaccine doses, saving tens of thousands of lives, while also providing quick and simple commercial drone logistics services to communities across the US and world.

Zipline unveiled their P2 delivery system in a video released in September, which showed how their combined drone system works. A larger unit flies hundred of feet above ground level while actual delivery is done by an attached droid module. They support a maximum weight of around 8 lbs, and have around a 10 mile service range and 24 mile total range per trip. The combined platform can move at an impressive 70mph pace and features automatic airspace avoidance technology along with advanced swarming AI to avoid collisions.

**30 . Date: 21-03-2025Partnership - Mach Industries and HevenDrones Partner to Boost U.S. Drone ManufacturingURL: https://dronelife.com/2025/03/21/mach-industries-and-hevendrones-partner-to-boost-u-s-drone-manufacturing/**

Mach Industries, a defense technology company based in Huntington Beach, California, has announced a new partnership with HevenDrones, a leading developer of hydrogen-powered drones. The companies aim to expand U.S.-based manufacturing of advanced unmanned aerial systems (UAS) through Mach’s Forge network.

The partnership will begin with production of three HevenDrones platforms—H100, H2D55, and Raider—at Mach’s flagship facility, Forge Huntington. The companies also plan to co-develop key drone components, including avionics, radios, fuel sources, and propulsion systems.

The agreement is a response to growing demand for advanced drone systems and a broader push to reduce dependence on foreign suppliers, particularly from China.

“We’re not just accelerating production, we’re creating the next generation of defense manufacturing,” said Ethan Thornton, CEO and founder of Mach Industries. “With HevenDrones as our global partner, together we play a key role in empowering the defense sector with advanced, high-performance drones, strengthening domestic manufacturing infrastructure to keep our military safe and at the forefront of technology.”

The Forge network, Mach’s survivable and scalable manufacturing model, is designed to support fast, flexible production of defense technologies. By integrating HevenDrones’ systems into Forge, the companies are creating a vertically integrated supply chain built for speed and resilience.

“Our customers urgently need thousands, and eventually tens of thousands, of drones to be deployed in-theater,” said Bentzion Levinson, CEO of HevenDrones. “Our goal is to provide quick-turn, full-scale American manufacturing of the most versatile, reliable, and powerful platforms available to the warfighter.”

Forge Huntington will be the first of several sites expected to fulfill large-scale drone orders. Mach’s decentralized approach allows it to adjust quickly to changing operational needs. This is a significant advantage in today’s fast-moving defense environment.

The partnership has goals beyond the U.S. domestic market. Forge will be expanded internationally, allowing allied countries to maintain their own production capacity for critical drone technologies. This supports national sovereignty and helps build a stronger global defense ecosystem.

By bringing production closer to home, the companies aim to make the U.S. and its allies less reliant on overseas suppliers. The collaboration also highlights the growing importance of drones in modern warfare and the need for a dependable industrial base.

Mach Industries will benefit from HevenDrones’ drone-specific technologies, while Heven gains access to a fast, vertically integrated manufacturing system. Together, they offer an alternative to the dominance of Chinese drone makers in the global market.

Mach Industries was founded in 2023 and focuses on advanced defense manufacturing. The company uses a vertically integrated model to speed up innovation and secure U.S. defense advantages. Backed by top venture firms, Mach specializes in lethal systems designed to deter conflict and protect global security.

HevenDrones, founded in 2019 and based in Miami, Florida, builds hydrogen-powered drones for defense applications. Its systems are known for endurance, modularity, and mission flexibility. Heven’s drones are designed to meet the needs of modern military operations with rapid production and deployment in mind.

**31 . Date: 21-03-2025Fixed Wing - ISR / ISTAR - Tactical - Regulation - Primoco UAV One 150 Achieves Dual NATO and EASA CertificationsURL: https://dronelife.com/2025/03/21/primoco-uav-one-150-achieves-dual-nato-and-easa-certifications/**

Czech Manufacturer Becomes First to Secure Military and Civilian Clearance for Medium-Sized UAV

Primoco UAV SE, based in Prague, has achieved a major breakthrough in the drone industry. The company announced that its One 150 unmanned aerial vehicle (UAV) is now the first in the world to receive both NATO military certification and a civilian Light UAS Operator Certificate (LUC) from the European Union Aviation Safety Agency (EASA).

The One 150, which has a maximum takeoff weight of 150 kg, is a fully autonomous UAV designed for both military and civilian use. It can fly for up to 15 hours, carry a 30 kg payload, and cruise at 120 km/h. It also features automated take-off and landing capabilities. The One 150 is the only UAV in its class to meet NATO’s STANAG 4703 standard, which removes many barriers for deployment across NATO member states. Since STANAG 4703 is a recognized standard, drones certified under it do not require separate and lengthy approval processes for each country.

“Nearly 40 engineers, designers, verification experts, and pilot-operators dedicated five years to demonstrating that our aircraft meets the most stringent requirements for operations in shared airspace with manned military aircraft and other certified UAVs,” said Ladislav Semetkovský, founder and CEO of Primoco UAV.

The certification was not easily won. Primoco’s One 150 underwent 200 separate test verifications, more than 170 flight tests, and around 50 ground-based trials.

“We compiled 28,000 pages of documentation, recorded 500 hours of video footage, and 123 GB of data. This illustrates both the challenge of obtaining this certification and the competitive advantage it provides our company,” Semetkovský added.

The company believes this achievement gives it a clear lead in the medium-size UAV sector.

In addition to military use, the One 150 is now certified for civilian operations under the EASA LUC at SAIL III level. This designation, awarded by the Czech Civil Aviation Authority, allows the aircraft to operate in urban environments.

With proper risk mitigation, the drone can be used over areas with population densities as high as 5,000 people per square kilometer. By comparison, Prague’s population density is about 2,800 people per square kilometer.

“This certification is the seal of approval for our high-tech level capabilities and ability to meet the highest regulatory standards. Such skills allow us to develop advanced UAV solutions for environments where most unmanned aircraft are prohibited or require complicated exemptions. It also enables us to operate in shared airspace alongside manned aircraft, offering operational versatility,” said Semetkovský.

The dual certifications open the door to a range of high-value applications. With its civilian clearance, the One 150 can support emergency services, deliver mobile signal coverage during blackouts or natural disasters, and calibrate airport navigation systems in crowded areas—all at a lower cost than manned aircraft.

These new capabilities come as demand for flexible and certified UAV platforms grows across defense and civil sectors.

Primoco UAV SE has been developing and manufacturing the One 150 since 2015. The company has delivered more than 200 aircraft to clients in 15 countries across four continents. It is publicly listed on the Prague Stock Exchange and focuses on UAV applications in reconnaissance, energy infrastructure monitoring, border and coastal security, and intelligence operations.

With its new certifications, Primoco UAV strengthens its position in both regulated civil airspace and NATO defense environments

**32 . Date: 23-04-2025H-Rotary - Cargo - Tactical - Market - Certo Aerospace Raises £3M to Accelerate UK Flight Trials of Large Uncrewed HelicoptersURL: https://dronelife.com/2025/04/23/certo-aerospace-raises-3m-to-accelerate-uk-flight-trials-of-large-uncrewed-helicopters/**

Certo Aerospace Ltd, a British aerospace company based in Somerset, has announced the successful raise of over £3 million in new capital through an equity placement. The company will use the funds to accelerate the development and testing of large uncrewed air systems (UAS), designed to reduce risk-to-life in defense missions and expand the role of drones in humanitarian and disaster relief operations.

Certo’s flagship aircraft, the CAPSTONE Vertical Take Off and Landing (VTOL) drone, is the largest drone currently flying regular missions in the United Kingdom. The drone uses a coaxial rotor system with two contra-rotating 5-meter blades and no tail rotor. This design improves energy efficiency and maximizes lift by eliminating the tail rotor, which typically uses up to 20% of a helicopter’s energy.

With a range of 300 miles and a flight endurance of up to eight hours, CAPSTONE can carry 300 kilograms in combined payload and fuel—matching its own dry weight. These capabilities place it among the most advanced VTOL aircraft in its weight category under UK Civil Aviation Authority (CAA) GROUP 3 regulations, which includes drones with a maximum take-off weight of 600 kilograms.

The CAPSTONE UAV is currently undergoing flight trials with multiple government agencies across southwest England. Testing takes place at several former military airfields, including sites previously operated by the Royal Navy, Royal Air Force, and the Army. The drone is designed to launch from both land and sea platforms, filling a gap between small multi-rotor drones and manned helicopters in terms of range and payload.

The latest equity raise exceeded expectations, reflecting growing investor confidence in the platform. “At our pre-deal valuation of £16m, we’re delighted that our original target amount was significantly oversubscribed,” said Certo’s Managing Director Justin Tooth. “This allowed us to expand the raise so that we can now further accelerate the UK flight trials of our 600kg VTOL CAPSTONE UAS and we are delighted to be showcasing two of our flying prototypes at the Future Lab exhibition at Goodwood Festival of Speed.”

This round of funding follows over $5 million in support from the U.S. Department of Defense in recent years. Certo is actively positioning the CAPSTONE platform for both UK and U.S. defense and civil UAS programs.

Certo’s chairman Jonathan Tate noted, “This raise was boosted in part by strong industry tailwinds in defence and autonomous technologies, but our impressive flying videos on social media also really helped. Investors swiftly saw that CAPSTONE is more than just another drone; it’s a highly capable, long-range multi-role unmanned helicopter.”

Certo Aerospace will showcase CAPSTONE at the 2025 Goodwood Festival of Speed, taking place July 10–13. The drone will be featured in the event’s Future Lab exhibition, presented by Randox and curated by Lucy Johnston. Future Lab highlights global innovations in space, AI, robotics, and health under the theme “Technology for a Better World.” British astronaut Tim Peake will return as the Future Lab Ambassador. Final tickets for the event are available at goodwood.com.

**33 . Date: 25-04-2025Acquisition - Heven Acquires Zepher Flight Labs, Expanding Hydrogen Drone CapabilitiesURL: https://dronelife.com/2025/04/25/heven-acquires-zepher-flight-labs-expanding-hydrogen-drone-capabilities/**

Hydrogen-powered drone developer Heven has announced the acquisition of Zepher Flight Labs (ZFL), a move that enhances the company’s ability to deliver flexible, mission-ready drone systems. Heven, based in Miami, is a recognized leader in hydrogen-powered unmanned aerial systems (UAS).

The acquisition will support Heven’s strategy to expand its modular and adaptable UAS fleet. By integrating Zepher’s technology, Heven aims to build drones with greater endurance, rapid deployment capabilities, and improved usability in both defense and commercial sectors.

“This acquisition strengthens our position in the market and underscores our commitment to providing the most advanced and reliable drone solutions,” said Bentzion Levinson, CEO of Heven. “With the addition of ZFL, Heven will be able to offer even more versatile systems tailored to meet the needs of our customers in defense, security, and commercial sectors.”

Zepher Flight Labs is well known for its lightweight VTOL drones, which are designed for quick field deployment and easy repair. These features align with Heven’s goals of building a drone fleet that is durable, efficient, and adaptable to a range of missions.

“We are excited to join the Heven family,” said Adam Stolz, CEO of ZFL. “Our complementary capabilities will allow us to accelerate the development of drone technologies, and together, we will continue to push the boundaries of what is possible in unmanned flight.”

ZFL’s team will integrate with Heven’s engineers and designers, enabling a collaborative approach to future product development. The combined teams will focus on expanding Heven’s roadmap with new drones that meet rising demands for long-range, long-endurance capabilities.

The acquisition follows a series of major initiatives from Heven. In February, the company launched Raider, a hydrogen-powered platform capable of flying for over 10 hours and carrying payloads up to 50 pounds. Heven also partnered with Mach Industries to scale U.S. drone production and introduced Heven Border Solutions, a system aimed at securing borders with persistent aerial surveillance.

The addition of ZFL is expected to accelerate product development and help Heven deliver enhanced solutions for both military and commercial customers.

About Heven

Founded in 2019, Heven builds hydrogen-powered drones engineered for endurance and adaptability. Designed for complex missions, Heven drones operate efficiently and reliably across a range of challenging environments.

About Zepher Flight Labs (ZFL)

Zepher Flight Labs specializes in VTOL drone systems. Their lightweight, long-range drones are built for quick field use and are suited to military and commercial applications where mobility and performance are critical.

**34 . Date: 29-04-2025M-Rotary - Cargo - MALE - Contract - SoftwareU.S. Army Selects Near Earth Autonomy and Honeywell to Retrofit Black Hawks for Autonomous LogisticsURL: https://dronelife.com/2025/04/29/u-s-army-selects-near-earth-autonomy-and-honeywell-to-retrofit-black-hawks-for-autonomous-logistics/**

The U.S. Army has selected Near Earth Autonomy (Near Earth) to lead a $15 million project to develop and field an optionally piloted contested logistics solution. The program will retrofit UH-60L Black Hawk helicopters with advanced autonomy kits. Funded by Army Program Executive Office, Aviation (PEO Aviation), the project is a collaboration between Near Earth and Honeywell.

The program’s goal is to create a logistics platform capable of 24/7 high-tempo operations without the need for onboard crews, remote pilots, or continuous data links. This minimizes risks to personnel while increasing operational tempo and throughput.

The initiative also sets the foundation for a repeatable, scalable retrofit process. This allows the Army to modernize legacy rotary-wing aircraft quickly, without long acquisition cycles. The UH-60L is the first target, but the design will support adaptability across multiple airframes.

Central to the retrofit is Near Earth’s deterministic autonomy architecture, called Captain. Captain ensures mission assurance even in degraded environments, such as areas without GPS or reliable communications.

Captain enables safe flight and hazard avoidance without human pilots or live remote control. The system uses a Modular Open Systems Approach (MOSA) to ensure modularity, affordability, and easy upgrades.

Near Earth’s long history in autonomous aviation supports the program’s foundation. In 2010, the company completed the world’s first fully autonomous helicopter flight for the U.S. Army’s Combat Medic Evacuation program. Near Earth also developed autonomy systems for the Office of Naval Research’s Autonomous Aerial Cargo/Utility System (AACUS) program, demonstrating uncrewed helicopter cargo deliveries in hazardous environments.

“This program is a significant step forward for Army logistics and autonomy,” said Sanjiv Singh, CEO of Near Earth. “We’re proud to bring our proven helicopter autonomy experience to bear and excited to see it operationalized at scale to support soldiers in the field.”

Honeywell is collaborating closely with Near Earth to deliver an affordable, scalable, and certifiable solution. Honeywell’s contributions draw from their existing avionics platforms, including flight decks, Compact Fly-by-Wire systems, and navigation technologies.

“Our avionics provides a modular, certifiable foundation that aligns with both today’s operational tempo and tomorrow’s autonomy goals,” said Matt Milas, President, Defense & Space, Honeywell Aerospace Technologies. “Whether for piloted, optionally piloted, or fully autonomous aircraft, our systems scale to meet evolving military needs with a certifiable foundation.”

Honeywell’s technologies are engineered for both retrofitting existing aircraft and supporting next-generation uncrewed systems. The solutions are built to meet today’s mission demands while enabling long-term advancements toward autonomous flight.

Near Earth began working toward an autonomous Black Hawk in 2021. Their autonomy systems have already powered more than 10,000 flights across over 140 different airframes, including those from Airbus, Bell, Boeing, Kaman, and Leonardo.

Through this new program, the Army and Near Earth will develop operational procedures for autonomous logistics flights. A series of flight tests will lead to a mature, mission-ready product that improves the Army’s ability to operate in contested, complex environments with greater speed, scale, and safety.

Near Earth Autonomy builds technology that enables aircraft to take off, fly, and land safely with or without GPS. Their systems support aerial mobility for both commercial and defense partners. By bridging aerospace and robotics, Near Earth provides solutions that improve the efficiency, performance, and safety of drones and helicopters of all sizes.

**35 . Date: 09-01-2023Regulation - Percepto Wins FAA Approval for Automated BVLOS Ops in TXURL: https://dronelife.com/2023/01/09/percepto-wins-faa-approval-for-automated-bvlos-ops-in-tx/**

Today, leading autonomous inspection and monitoring solution provider Percepto announced that its drone-in-a-box solution has been authorized by the Federal Aviation Administration to conduct highly automated Beyond Visual Line of Sight (HA BVLOS) inspection and monitoring operations at a solar power plant in Texas.

The approval extends to up to 200 feet above ground level, twice the altitude of any previously approved HA BVLOS drone operation in the U.S., and allowing for more operational flexibility to monitor larger areas and structures, such as mapping and modeling applications.

Percepto’s advanced technology enables an automated detect and avoid (DAA) cycle without the need for a pilot or visual observer on site, removing the requirement for remote pilot in command intervention upon detection of other aircraft within the airspace. This functionality will enable the future deployment of centrally controlled drone-in-a-box fleets of multiple sites.

“Gaining this approval marks a significant milestone to provide remote and autonomous inspections at industrial sites, fulfilling Percepto’s mission to provide safe and reliable critical infrastructure,” said Percepto Policy & Government Affairs VP Neta Gliksman. “We are grateful to the FAA for their diligence in reviewing Percepto’s safety case, and we look forward to continuing to support the critical infrastructure community across the U.S.”

The initial deployment at the solar power plant deployment will serve as a model for additional industries, such as oil & gas, and mining and utilities, to improve site efficiency via autonomous remote inspection missions. Percepto’s automated drone-in-a-box technology has seen use in many of these industries to simplify preventive maintenance, increase efficiency, improve safety and lower operational costs.

**36 . Date: 14-02-2023ISR / ISTAR - Mini / Small - General - PlatformHevenDrones Launches New Commercial Hydrogen Drone: H2D55URL: https://dronelife.com/2023/02/14/hevendrones-launches-new-commercial-hydrogen-drone-h2d55/**

Today, HevenDrones launched the H2D55, the company’s first hydrogen-powered drone for commercial use.

Boasting 5-times greater energy efficiency than that of a traditional lithium battery-powered drone, the lightweight H2D55 can fly for 100 minutes with a payload capacity of 7kg. The H2D55 will be unveiled at IDEX later this month.

The H2D55 is the first in a planned lineup of 3 Hydrogen fueled drones made to address lithium battery-powered drones’ flight endurance and payload capacity limitations, in addition to the long term environmental impact of lithium mining. Without needing to regularly replace batteries, hydrogen fuel cells will also lower long term ownership costs. The forthcoming models in the product line will be released over the next 9 months, and will improve upon the H2D55’s payload capacity while maintaining its flight endurance.

The carbon neutral H2D product-line is designed to be fully customizable to suit the user’s needs. Potential commercial applications range from last-mile and just-in-time (JIT) delivery, measuring the nutrient levels of soil and precision crop spraying to collecting risk-assessment data for construction companies, surveying real estate for reforestation projects and aiding emergency responders in risk assessment and delivery of life saving equipment. Meanwhile, defense applications include intensive surveillance missions and supplying greater quantities of medical aid, food and ammunition to soldiers.

The H2D55 features a control system consisting of multiple gyroscopes and supporting algorithms, considerably extending the operating limits of stable flight.

“We are delighted to bring hydrogen-powered drones to the global market and we are excited to see the expanding range of use-cases across numerous industries,” said HevenDrones Founder and CEO Bentzion Levinson. “Not only do actionable drones add immense value to key areas of our economy and society, but we are working to ensure that this value is compounded by reduced carbon emissions and general energy efficiency by using hydrogen. The H2D55 is our first step towards achieving this vision.”

**37. Date: 21-03-2023General - SurvivabilityIce Protection for Drones: CAV Systems Files PatentURL: https://dronelife.com/2023/03/21/ice-protection-for-drones-cav-systems-files-patent/**

CAV Ice Protection Limited, an airborne ice protection solutions supplier and part of the CAV Systems Group, has filed for a patent for a solution for small uncrewed aerial systems (sUAS) that could dramatically improve the operation of commercial drones in cold climates. The company’s engineers designed a concept ice protection system (IPS) that prevents the build-up of ice on the rotor blades of a drone or sUAS, which it is currently looking to bring to market.

“This is an industry first, nobody has previously demonstrated an ice protection system that works for this size of aircraft, and we’re not aware that anybody else is working on one,” said CAV Systems’ VP of Engineering Alex Baty. “We’re ahead of the curve in that respect and it has attracted the attention of some major distributors. We know that, globally the use of drones for last mile delivery is already in action. We hope that our anti-icing system can help to tackle a significant obstacle to widespread drone usage. Our testing has seen the effects of icing on a propeller will cause a 50% reduction in lift generation after just three minutes, which underlines the impact that icing can have on sUAS.

“If sUAS-based product delivery is to move forward, and become viable across a range of geographical locations, then ice-protection will need to be factored in, in order to guarantee safe, efficient and reliable flying. There are some potential niche applications as well: the idea has been explored of using sUAS to launch flares that would seed clouds with silver oxide particles for weather modification. Imagine being able to use unmanned aircraft to remove freezing fog conditions around an airport,” Baty continued.

The solution functions by distributing freezing-point depressant fluid along the edges of the aircraft’s carbon-fiber blade.

The system’s initial tests started with a single 18” diameter motor and propeller assembly before moving on to an Octocopter. Additional tests incorporated models with and without the IPS in an icing wind tunnel replicating freezing conditions.

The tests found that the application of the CAV IPS to the propeller resulted in lift of the model reducing by as little as 10%, with minor changes to power compared to ice build-up, and a 50% reduction of ice. Twice the electrical power was consumed when foregoing the ice protection.

Engineers at CAV Systems brought the Octocopter system’s weight to below 2kg, approximately 20% of the test model’s total payload, which the engineers believe can be brought down by a further 25% depending on the aircraft’s total flight plan.

“The work we have done, and are continuing to do, around weight reduction will have a huge bearing on the solution. When a drone has a payload of around 10kg, 500g is a significant percentage,” Baty added.

**38 . Date: 06-03-2023ISR / ISTAR - Small - Market - Velos Rotors Raises Seed Funding: Industrial Grade, Helicopter UAVURL: https://dronelife.com/2023/04/06/velos-rotors-raises-seed-funding-industrial-grade-helicopter-uav/**

UAV manufacturer Velos Rotors, Inc. has announced the completion of a $2 million seed round by Marathon Venture Capital. The investment will enable Velos to scale its manufacturing capacity in order to meet the rapidly growing demand for its trailblazing flying machines.

The widespread adoption of drones has been somewhat stymied due to certain shortcomings of the widely used multicopter design. While the thrust an aerial vehicle produces is proportional to the surface of its propeller, multicopters employ multiple small propellers that each cover a small surface, expending large amounts of energy.

Velos has developed a new UAV making use of a helicopter design. This twin-engine model offers industry-leading redundancy, lessened noise and vibration, and increased efficiency and performance.

The company’s full-electric, sub 55 lbs UAVs is able to reliably carry a 13 lb payload for 60 minutes at 35 MPH in nearly any weather condition (IP65), enabling a range of new possible applications.

Velos is providing specialized, end-to-end solutions for a variety of use cases across logistics, medical supplies, inspections and government applications, including human organs transportation, blood samples, border patrol, search & rescue and large-scale surveying missions. The company has already delivered dozens of drone helicopters worldwide, which have amassed thousands of flying hours.

“We crafted from the ground up what we are proving to be the best UAV in the market,” said Velos founder and CTO Aris Kolokythas. “Our drone helicopters are pushing aviation forward and we are excited to put them in the hands of more enterprise customers globally.”

“We are proud to serve our global customer base with our superior performance, reliability, and safety,” said Velos CEO and US Navy veteran Michael Seal. “The investment from Marathon Venture Capital will enable us to bring our product line to market faster and make a meaningful impact on the industries we serve.”

“Multicopters are for hobbyists. The market needs industrial-grade UAVs, and Velos is the first to deliver them,” said Marathon Venture Capital partner George Tziralis. “We are thrilled to work together with Aris, Michael and team to bring meaningful innovation to the market. Plus, if you are into aviation and want to make an impact with your work, Velos is the place to be!”

**39 . Date: 10-04-2023ISR / ISTAR - Tactical - Contract - Czech Primoco UAV to Supply Navigational Calibration System for AirportsURL: https://dronelife.com/2023/04/10/czech-primoco-uav-to-supply-navigational-calibration-system-for-airports/**

Czech UAV manufacturer Primoco UAV has signed a contract to supply Malaysian company GIAAN GROUP with a new NAVAID calibration system. This calibration solution is utilized by the Primoco UAV One 150 UAVs, and has applications in the inspection, calibration and evaluation of a range of airport navigation equipment including ILS/VOR/DME/TACAN/COM, as well as visual tools such as PAPI/VASI. GIAAN seeks to leverage the system to conduct calibration missions at airports within the Southeast Asia region. The EUR 3.7 million contract also includes the purchase of two One 150 UAVs.

Primoco UAV is the manufacturer of One 150 civilian and military unmanned aircraft. The One 150 is a heavy weight cargo drone with a max take-off weight of 150 kg (about 330 pounds), flight endurance of 15 hours, and a range of 2000 km or 1242 miles. With a 30 kg (66 pound) payload, Primoco focuses on civil and military applications including energy, border and first responder and disaster recovery operations.

“While existing UAV calibration solutions typically use miniaturized hardware that does not always handle actual transmitter and receiver data, Primoco UAV One 150 carries the identical calibration and measurement equipment as manned platforms,” said Primoco UAV SE CEO Ladislav Semetkovský. “This significantly reduces the cost of the precise ICAO standard output that customers require from air navigation calibration missions.”

**40 . Date: 04-01-2023Cargo - Tactical - General - PlatformKawasaki Heavy Industries Tests Unmanned K-RACER-X2 VTOL for High-Altitude Deliveries in Japan’s Mountainous RegionsURL: https://dronelife.com/2024/01/04/kawasaki-heavy-industries-tests-unmanned-k-racer-x2-vtol-for-high-altitude-deliveries-in-japans-mountainous-regions/**

Minato City-based industrial conglomerate Kawasaki Heavy Industries recently successfully tested their helicopter-like “K-RACER-X2” VTOL at Ina Ski Resort, Nagano, Japan. Due to the declining population of Japan’s mountainous regions and the poorly maintained ground infrastructure, Kawasaki is responding to a need for vertical mobility solutions in Japan’s remote interior, such as delivery of supplies to remote mountain huts in the ski resort-filled area.

The X2 is based on the earlier X1, but is more suited to high-altitude tasks, being capable of carrying a payload of up to 100kg to a height of over 3000m. Its maximum payload at lower altitudes is listed at 200 kg. These impressive upgrades result from increasing the size of the main rotor (powered by a motor similar to that in the Kawasaki Ninja motorcycle) from 5m to 7m. This test flight is a result of the jointly-run “Project to Build a Material Transport Platform Using Unmanned VTOL Vehicles” between Kawasaki and Ina City.

Kawasaki Unmanned VTOL: K-RACER X2

Helicopter-like conventionally-powered VTOLs have some significant advantages over their electric brethren, including easy infrastructure integration and increased payloads. The FAA granted a waiver to a Swiss company, Phoenix Air Unmanned, to test their version of the uncrewed helicopter in the United States. High-altitude drone delivery programs have also been taking off recently, with a partnership between another Japanese company and a Mongolian hospital resulting in testing on one of the highest future regular delivery routes in the world in Ulaanbataar.

**41 . Date: 18-09-2024Cargo - Tactical - Contract - ULTRA UAVs to Support Norway’s Troll Observing Network in Expanding Global Understanding of the Antarctic EnvironmentURL: https://dronelife.com/2024/09/18/windracers-ultra-drones-to-aid-critical-antarctic-research-with-norce/**

English UAV developer Windracers recently announced that it had been contracted to provide independent Norweigan research institute NORCE with two of its ULTRA long distance cargo drones, for use in new scientific surveys of the Antarctic.

These ULTRA UAVs will support the Troll Observing Network (TONe), a modern multi-platform, multi-disciplinary distributed observation network that will be established on and around the Norwegian research station Troll in Dronning Maud Land, one of the least studied regions of Antarctic territory. TONe will strengthen Norway’s Antarctic research and monitoring capability to give Norwegian and international researchers access to observational data as a basis for new knowledge.

“NORCE will employ two Windracers ULTRAs to help carry out a critical environmental mission of global importance, namely, to gain a comprehensive knowledge of the physical, biological, chemical and geological processes taking place now in Antarctica,” said Simon Muderack, CEO of Windracers. “Windracers ULTRA is uniquely suited to support NORCE through its multi-mission capability and Antarctic mission experience in January 2024. The entire Windracers team looks forward to growing partnership with NORCE and delivering their mission of creating a better understanding of the Antarctic.”

Rune Storvold, Senior Vice President of Observing Systems of NORCE, said, “One of the reasons why NORCE has chosen Windracers ULTRA is because of its proven ability to complete missions in the extreme conditions of Antarctica. This is a part of a 200 million pound (GBP) upgrade with a new research station at Troll, renewable energy system and with eight science observatories and a drone service based on the Windracers ULTRA aircraft that allow us to carry a comprehensive optical and radar payload and cover the region from the nearby ocean to the Antarctic Plateau.”

Specializing in operations in the Arctic and Antarctic, NORCE develops sensors for integration into platforms (such as the Windracers ULTRA) for data analysis and real-time monitoring, data collection, analysis distribution and visualization. According to the press release, Windracers ULTRA is a heavy-lift, long distance self-flying cargo aircraft with a useful payload of up to 100kg and range of up to 1,000km.

This won’t be the ULTRA’s first jaunt to the frozen environs of the bottom of the world- Windracers has reported over 3000km flown across 25 different research flights in the Antarctic region, including a February survey expedition with the British Antarctic Survey (BAS).

**42 . Date: 19-09-2024Partnership - SoftwareAirbus and German Drone Developer Successfully Test AI-Driven Swarm Technology for the BundeswehrURL: https://dronelife.com/2024/09/19/airbus-and-german-drone-developer-successfully-test-ai-driven-swarm-technology-for-the-bundeswehr/**

European aerospace giant Airbus and German drone developer Quantum Systems recently announced that their AI drone swarm technology had been successfully tested at the Airbus Drone Center near Manching, marking the conclusion of testing sponsored by the Bundeswehr.

Commissioned by the German Armed Forces in July 2023, the study aims to maximize the potential of artificial intelligence to coordinate mixed UAS swarms with different capabilities. The specially developed mission-AI “controls and coordinates the UAS systems to ensure reliable mission execution even in scenarios with radio interference or a complete failure of individual drones.” To train the AI, Quantum Systems and Spleenlab used deep reinforcement learning in a controlled environment to ensure precise and valid decisionmaking

As part of the testing, Vector and Scorpion UAVs from Quantum Systems, alongside two other multi-purpose drones from Airbus, were deployed in an AI-powered “swarm” configuration. The reconnaissance data from all drones was merged in real-time to form a joint situational picture, which was then integrated into the Airbus “Fortion Joint C2” battle management system. The Vector drones demonstrated their ability to autonomously perform missions such as joint reconnaissance and target acquisition under GPS-denied conditions (GNSS denied). As systems jamming remains a significant threat in difficult operating environments like Ukraine, the success of these tests highlights the potential for AI to aid in real battlefield conditions.

Sven Kruck, CRO and Managing Director of Quantum Systems, said, “We are not just expanding the technological capabilities of our drones. We give customers and users a real advantage in real-life scenarios. It’s about protecting soldiers and increasing safety. In the future, there will be no way around software-based and AI-supported systems for drone technology.”

The research results from the KITU2 study are intended to support the development of autonomous systems for major Bundeswehr projects such as the Main Ground Combat System (MGCS) and the Future Combat Air System (FCAS).

**43 . Date: 14-10-2024Cargo - Tactical - General - JDrone Launches Cargo Drone Service in Rural Japan with Powerful Heavy-Lift DronesURL: https://dronelife.com/2024/10/14/jdrone-launches-cargo-drone-service-in-rural-japan-with-powerful-heavy-lift-drones/**

Tokyo-based cargo drone operator JDrone recently announced they had begun their cargo service on Aug. 1, 2024, filling a need for highly flexible cargo services in the heavily forested and mountainous interior of Japan. Using a Yamaha FAZER R G2 (nicknamed “Kibitaki”), a domestically designed cargo drone designed for the industrial sector, as well as a DJI Flycart 30, JDrone will begin operations to rural construction sites, forestry camps, and mining facilities. In addition, JDrone will provide drone delivery services in disaster-relief environments, where drones have become an increasingly important part of post-earthquake recovery efforts as roads and bridges become impassable.

The helicopter-style Yamaha FAZER R G2 has a maximum cargo capacity of up to 50 kg (roughly 120 lbs), giving it heavy hauling power, and can fly at a dizzying 2800m, giving it immense operational flexibility even in high-altitude environments. This is combined with an impressive 90 km (roughly 55 mile) range, and has been used for applications spanning pesticide spraying to testing radiation levels around nuclear facilities. It’s also gas-powered, which makes it more powerful over longer distances than its electric counterparts.

The DJI Flycart 30 is a powerful eight-rotor design, with a 30 kg (roughly 65 lb) payload capacity over a range of around 16 km, with the ability to bump its capacity to 40 kg over a shorter 8km distance. With a maximum wind resistance of 12m/s, a maximum flight altitude of 6,000m, and an protection rating of IP55, its ready for missions in challenging terrain and weather environments.

With its two cargo units, JDrone hopes to begin transporting survey and observation equipment and construction materials in difficult field work environments such as volcanic areas, transporting seedlings in forests and daily necessities to mountain huts, and transporting supplies in the event of a disaster.

**44 . Date: 03-01-2025Partnership - PteroDynamics Partners with Cornes Technologies to Bring Transwing UAS to JapanURL: https://dronelife.com/2025/01/03/pterodynamics-partners-with-cornes-technologies-to-bring-transwing-uas-to-japan/**

Colorado-based fixed wing drone developer PteroDynamics recently announced a new exclusive distribution partnership with Japan-based technology company Cornes Technologies. Cornes Technologies will be the exclusive distributor of the Transwing UAS on behalf of PteroDynamics in Japan for commercial, defense, and other government sales. In addition to marketing, prospecting, and sales, Cornes Technologies will provide post-sales training and support for Japanese customers.

The Transwing is designed to combine the best parts of both VTOL and fixed-wing drone platforms, all in an efficient and highly automated package. According to the press release, the aircraft folds its wings to transition seamlessly between vertical and winged horizontal flight, requires no launch and recovery infrastructure, and occupies one-third or less ground footprint than other VTOL aircraft with a comparable wingspan.

“Japan is an important strategic market with significant need and growth potential for PteroDynamics’ Transwing aircraft. Success requires teaming with a world-class organization with deep and long-standing relationships within the Japanese commercial, aviation, and defense sectors,” said PteroDynamics CEO Matthew Graczyk. “We are excited to forge such an important relationship with a company of Cornes’ high caliber and to work together to bring the unique and innovative capabilities of the Transwing UAS to the Japanese market.”

“We are pleased to announce that Cornes Technologies has chosen PteroDynamics because of their innovative Transwing VTOL UAS technology, which offers a high degree of performance and versatility in a variety of operational environments,” said Kazuhiko Nishioka, president, representative director at Cornes Technologies. “Given the Japanese government’s commitment to integrating drones into defense and commercial applications, we see a significant opportunity for the Transwing in this rapidly expanding market. We believe that PteroDynamics’ cutting-edge technology is well suited to the evolving needs of Japan’s defense and commercial sectors, offering solutions that are robust and future-proof.”

As part of the partnership, both Cornes Technology and Pterodynamics were at the 2024 Japan International Aerospace Exhibition, which was held in October.

**45 . Date: 28-01-2025Hybrid Rotary / Fixed Wing - Cargo - MALE - General - Engine / PowersourceThe Aero2 Self-Charges Batteries Mid-Flight, Setting a New Standard for Sustainable Cargo and Remote Sensing SolutionsURL: https://dronelife.com/2025/01/28/dufour-aerospaces-aero2-completes-historic-hybrid-electric-test-flights/**

Swiss drone manufacturer Dufour Aerospace recently announced the completion of its first flight test campaign with their in-house hybrid electric powertrain for its Aero2 drone. The Aero2 flew several test flights in Zurich, with the hybrid system self-charging its batteries in flight.

This is believed to be the first-ever successful flight of a large-scale serial hybrid-electric aircraft, transitioning from vertical takeoff to forward flight. The news fulfills Dufour’s vision of producing a hybrid-electric powertrain, with an innovative tilt-wing design, and autonomous flight capabilities.

“Dufour Aerospace achieved a major milestone with these flights,” said Sascha Hardegger, CEO of Dufour Aerospace. “All of Dufour’s in-house developments — the Flight Control System and Control Software, Power Management System, and the integrated Powertrain — must work together seamlessly to achieve this.”

“The beauty of the Aero2 is mission-efficiency and a simpler system for charging aircraft. Our customers do not need to plug in the Aero2 for hours to run their next mission. Recharging is accomplished in the air, not on the ground, enabling back-to-back missions. It can land, exchange the payload, and restart the next mission immediately.”

When taking off, the Aero2 is fully powered by high-performance batteries, making it quiet and efficient. When flying forwards, the Aero2 hybrid-electric system is engaged to produce electricity on board, which powers the electric motors and recharges the batteries.

While the hybrid system uses conventional gasoline today, it’s actively being modified to accept sustainable aviation fuel or even kerosene. Regardless, both its overall carbon footprint (and operating costs) are dramatically lower than helicopters or the conventionally fuelled helicopter style drones of today.

“Dufour has proven the critical systems on the aircraft. It demonstrates that our aircraft will be mission-ready for all of the use cases we envision,” Hardegger said. “Initially, we are focusing on the delivery of critical cargo such as medical goods or urgently needed spare parts, where we are seeing a lot of operators and end-users waiting for efficient transport solutions. Additionally, we are closely looking into supporting various remote-sensing applications.”

Based in Visp and Zurich, Dufour “develops and manufactures efficient and sustainable aircraft for cargo transportation, logistics, and public safety”. According to their press release, the Aero2 drone features distributed electric propulsion and a hybrid module to meet today’s Advanced Air Mobility and medium-sized drone market requirements.

**46 . Date: 12-02-2025Hybrid Rotary / Fixed Wing - ISR / ISTAR - Small - General - PlatformALTI Unmanned Enters the All-Electric Era with New Transition eVTOL DroneURL: https://dronelife.com/2025/02/12/alti-unmanned-enters-the-all-electric-era-with-new-transition-evtol-drone/**

South Africa-based drone developer ALTI Unmanned recently unveiled their new Transition electric vertical takeoff and landing (eVTOL) drone, their first foray into the burgeoning all-electric space. With over 3 hours of flight endurance with a full payload, the Transition is being positioned towards defense and commercial clients with a variety of mission needs with its low operational costs, (under $10 per hour), 3m wingspan, 100km range, and 40km/h cruising speed.

“Our decision to go fully electric stems from the need to meet our clients’ evolving demands. We’ve focused on delivering an aircraft that’s as close to 100% reliable as possible—safe, cost-effective, and virtually undetectable. Our clients, whether in surveillance, reconnaissance, or conservation, require an aircraft that’s not only efficient but also silent and stealthy. While going all-electric, we continue to lead the way with best-in-class endurance, achieving over 3 hours of flight time, fully equipped with payload. Moving into an all-electric future allows us to ensure that we continue to meet these needs while offering the most advanced, dependable solutions available,” said Duran De Villiers, Founder & Director of ALTI Unmanned.

Currently available payload options from ALTI include the E95, featuring full-HD (1920x1080p) video capture capabilities with serious optical zoom capacity, as well as a 640 x 512 LWIR IR sensor with up to a 4x digital zoom, the Raptor, with an HD 720p camera and IR system with up to 40x optical zoom, and a photogrammetry payload featuring a SONY ILX-R1 with a 61.0MP Full Frame, 24mm G Series Lens, and GSD at 100m AGL – 1.57cm p/pixel, combined with an EMLID multi-band ground sensor featuring centimeter-accurate PPK mapping, up to 100km of baseline in PPK, and full camera synchronization.