**1 . Date: 25-01-2023General - Engine / PowersourceHevenDrones named “Most Disruptive Hydrogen Mobility” Company by Monaco Hydrogen AllianceURL: https://www.suasnews.com/2023/01/hevendrones-named-most-disruptive-hydrogen-mobility-company-by-monaco-hydrogen-alliance/**

HevenDrones, a leader in the development and commercialization of actionable drones, announced today its selection by the Monaco Hydrogen Alliance as the company with the most disruptive potential in the field of hydrogen mobility. HevenDrones was selected over ten hydrogen projects as the most likely to disrupt the hydrogen mobility market.

From autonomous last-mile delivery to emergency response, smart cities, and infrastructure repair, HevenDrones develops and manufactures actionable drones, designed to drive energy efficiency and sustainability across a range of commercial ecosystems, providing the required balance between payload and endurance.

The company is a market leader in harnessing the benefits of hydrogen as a power source for its drones, enabling extended flight times as well as the ability to carry heavier payloads and lower cost of ownership. HevenDrones’ Hydrogen-powered drones are also more ecological and less polluting.

“We are honoured to be named the company with the most disruptive potential by the Monaco Hydrogen Alliance. This award recognizes our unique combination of technological expertise and our commitment to a more energy-efficient, hydrogen-based, drone ecosystem,” said Bentzion Levinson, Founder & CEO of HevenDrones. “We are excited to strengthen and expand our partnerships with leading hydrogen companies as we continue to develop the next generation of hydrogen-powered drones, with greater energy efficiency and lower carbon impact.”

About HevenDrones

HevenDrones is building the next generation of multi-purpose, actionable drones, capable of solving a range of commercial, infrastructural, humanitarian and military challenges. Actionable drones not only capture visual and sonic information but can perform highly useful tasks simultaneously. From autonomous last-mile product delivery to defence missions, emergency response, and infrastructure repair, Heven’s fully-customizable drone solutions deliver cutting-edge performance, patented stability and superior lifting capability. The company is an early adopter of hydrogen technology, significantly extending flight times and speed. Heven’s leadership team includes industry experts from military, engineering and science backgrounds, with decades of combined experience.

**2 . Date: 25-01-2023ISR / ISTAR - Mini - ContractMinistry of Defense of Ukraine orders additional 105 surveillance drones from German manufacturer Quantum-Systems URL: https://www.suasnews.com/2023/01/ministry-of-defense-of-ukraine-orders-additional-105-surveillance-drones-from-german-manufacturer-quantum-systems/**

Quantum-Systems GmbH, an aerial intelligence company that provides multi-sensor data collection drones to government agencies and commercial customers, today announced it will deliver 105 additional long-endurance reconnaissance drones type Vector™ in military support of Ukraine’s armed forces, funded by the German Government.

Founded in 2015, Quantum-Systems is at the forefront of UAS development. Its electric vertical take-off and landing (eVTOL) systems boast industry-leading endurance, ease of operation, and reliability, exceeding the performance of conventional UAS platforms.

Supporting Ukraine with real-time aerial intelligence

The Ministry of Defense of Ukraine has placed a second batch order of Vector™ systems, following an earlier order of 33 UAS of the same model in August 2022. Since then, the system was able to demonstrate it delivers unprecedented performance under the most challenging conditions. Vector™ has been extensively used and intensively tested on the Ukrainian battlefield, where it has proven to be an asset for military intelligence, surveillance, and reconnaissance operations. Its robust and rugged design makes it well-suited for operation in harsh environments and extreme weather conditions.

Quantum-Systems is pleased to announce that with the latest software update, Vector™ is also able to operate in GNSS-denied scenarios. The direct and immediate feedback received from the operators in the Ukrainian battlefield, as well as Quantum-Systems’ commitment to enhance security capabilities through technological advancements, accelerated development processes. New findings have been directly incorporated into the advanced technology of Vector. A fact which may have been decisive for the MOD’s decision.

Onsite training and support

To further provide support to the Ukrainian forces, Quantum-Systems also announces the opening of a Training and Support Facility in Ukraine. This facility will provide training for operators on the use and maintenance of the Vector™ system and will be the local hub for procuring spare parts and repair services.

“We are honored to be able to help Ukraine with the defense of their country and we are committed to continuing to provide the highest quality systems to their forces. Our belief in democratic values and the challenges faced by the Ukrainian soldiers daily, only motivate us even more so and speed up our development processes. Being able to further equip Vector with combat proven features and capabilities in a short period of time is crucial for us as a manufacturer and the operators of our systems, from which all of our Vector™ customers will profit”, said Florian Seibel, CEO of Quantum-Systems.

Growing Vector capabilities

Vector™ integrates dual Electro-Optical (EO) and Infra-Red (IR) gimbaled sensors, enabling missions both day and night. It streams real-time live video to multiple Ground Control Stations via Mesh IP encrypted data links and is equipped with advanced AI capabilities onboard. The data assessment and image processing of Vector™ is supported by automatic detection, identification, and tracking algorithms, which provide on-the-ground tactical units with mission-critical data.

With a flight time of 120 minutes, Vector is suited for applications such as ISR for enhanced live situational awareness, area mapping, battle damage assessment, Search & Rescue (SAR), and convoy and VIP protection.

**3 . Date: 02-02-2023Armed ISR / ISTAR - MALE - General - DatalinkGA-ASI Flight Tests LEO SATCOM on MQ-9AURL: https://www.suasnews.com/2023/02/ga-asi-flight-tests-leo-satcom-on-mq-9a/**

Capability Provides Global Coverage That Enables Operations Anywhere in the World

General Atomics Aeronautical Systems, Inc. (GA-ASI) and the Air National Guard (ANG), with joint support from the U.S. Marine Corps (USMC) and U.S. Air Force (USAF), flight tested an MQ-9A remotely piloted aircraft (RPA) equipped with a Low Earth Orbit (LEO) satellite communications (SATCOM) Command and Control system. This groundbreaking capability provides global coverage and connectivity that will enable pole-to-pole operations for GA-ASI’s family of RPA – including models such as the MQ-9B SkyGuardian®/SeaGuardian®, MQ-9A Reaper, and Gray Eagle 25M.

“This is truly game-changing for our platforms,” said GA-ASI President David R. Alexander. “Using LEO SATCOM not only keeps GA-ASI aircraft connected from the North Pole to the South Pole to allow operations in the most austere environments, but it will also provide resilient connectivity that allows operators to pass much more data to and from the aircraft.”

Early testing indicates LEO SATCOM significantly reduces latency and can be used in all phases of flight. For customers across the MQ-9 family of systems, LEO SATCOM should decrease operational costs, and the smaller hardware footprint will ultimately increase flexibility and reduce future payload integration costs.

The MQ-9A flight test was based out of GA-ASI’s Gray Butte Flight Operations Facility near Palmdale, Calif., and followed several weeks of ground testing.

**4 . Date: 22-02-2023ISR / ISTAR - Tactical - ContractPrimoco UAV announces sales contract worth EUR 2.35 MillionURL: https://www.suasnews.com/2023/02/primoco-uav-announces-sales-contract-worth-eur-2-35-million/**

Primoco UAV SE has announced a new contract for the supply of unmanned aerial vehicles. The Czech manufacturer will deliver machines with an aggregate value of EUR 2.35 million to a European customer.

Primoco UAV SE’s new order follows a successful 2022, in which the company sold a total of 22 UAVs One 150. Twelve of them were delivered to customers last year, and the remaining ten will be completed and handed over in the first half of 2023. “Our goal for 2023 is to deliver a total of one billion crowns worth of unmanned aircraft and services to our customers. Due to the ongoing negotiations, I expect that the first contract concluded this year will be followed by the sale of 9 more machines in Asia and Africa in the first half of the year,” said Ladislav Semetkovský, founder and CEO of Primoco UAV SE.

The shares of Primoco UAV SE are traded on the PX START market of the Prague Stock Exchange. The company’s securities were among the best-performing shares on the Prague stock market last year with an appreciation of 52%.

In addition, from 30 January 2023, the purchase and sale of Primoco UAV SE shares is even more accessible to retail investors. The Prague Stock Exchange reduced the basic investment volume (lot) for this title on the Start market to 10 units, which at the current rate corresponds to CZK 4,000. Originally, the minimum threshold was ten times higher.

**5 . Date: 07-02-2023Solar ISR / ISTAR - HALE - General - PlatformSkydweller Aero Inc. Successfully Demonstrates Initial Autonomous FlightURL: https://www.suasnews.com/2023/02/skydweller-aero-inc-successfully-demonstrates-initial-autonomous-flight/**

Skydweller Aero Inc., an aerospace company developing solar-powered aircraft for defense and commercial industries, today announced the successful completion of its first autonomous flight test demonstrations utilizing the company’s new proprietary fly-by-wire (FBW) actuation control system. Having met the criteria for safety-critical operations by the Spanish Civil Airworthiness Authority (AESA), Skydweller’s test pilot passively rode along on-board, validating both the successful transformation from mechanical to human-rated FBW actuation and the successful integration of full authority autonomous control capability.

This series of flight tests conclude the initial validation of the aircraft’s mechanical transformation from a piloted vehicle to a redundant FBW system flown from take-off to landing without any pilot input. The system demonstrates the basis and airworthiness approval for the high-reliability redundant flight control architecture, significantly decreasing remaining technical risk and accelerating Skydweller’s time-to-market.

“Our approach and speed of execution is based on our team’s collective experience designing and developing advanced autonomous platforms. These significant technical accomplishments propel us toward our ultimate goal of perpetual flight,” said CEO Dr. Robert Miller. “Given the proven history of the airframe and this validation of our successful transformation from a piloted aircraft to an autonomous platform, Skydweller is prepared to demonstrate the aircraft’s operational utility.”

The aircraft’s unique technical characteristics and design implementation provide the necessary levels of redundancy in its autonomous Vehicle Management System (VMS) required to deliver unprecedented utility based on its payload capacity and available power. Multiple levels of redundancy will enable customers to launch multi-month missions which will revolutionize both commercial and government operations.

Skydweller now sets its sights on additional technology maturation for payload demonstrations that will lead towards the company’s first fully autonomous and unmanned flight.

About Skydweller Aero Inc.

Skydweller Aero Inc. is a cutting-edge aerospace company developing solar powered aircraft solutions capable of achieving perpetual flight with heavy, and powerful payload capacity. Utilizing technology based upon the longest continuous renewably powered flight program in history, this fast-growing startup is developing a new class of unmanned aircraft, providing the persistence of geosynchronous satellites with the powerful sensing capabilities and the flexibility of a large, airborne platform. Skydweller Aero Inc. has World and US headquarters in Oklahoma City and European offices headquartered in Spain.

**6 . Date: 13-03-2023Research - Small - General - Engine / PowersourceFlyH2 Announces the Successful Maiden Flights of Dragonfly V, the Next Generation Hydrogen-Powered UAV  URL: https://www.suasnews.com/2023/03/flyh2-announces-the-successful-maiden-flights-of-dragonfly-v-the-next-generation-hydrogen-powered-uav/**

Cape Town-based FlyH2 Aerospace has announced the successful maiden flights of its hydrogen-electric Dragonfly V, a commercial UAV (or drone) designed for a range of applications requiring long endurance or payload flexibility. The flight tests took place last week in Citrusdal, approximately two hours outside of Cape Town, South Africa.

While there is still a way to go until the Dragonfly V is fully ready for production, the aircraft has already demonstrated remarkable handling and efficiency during its first flights. Dragonfly V is a fixed-wing STOL (Short Take-Off and Landing) drone that is targeted for use in multi-mission applications in landscape management such as agricultural pest control, forestry, farm security, and wildfire and wildlife management including anti-poaching. Capable of carrying heavy and high-volume cargo, Dragonfly V is also ideal for long-range humanitarian airdrops.

“We are thrilled to announce the success of our maiden flight tests for the Dragonfly V,” said Mark van Wyk, a principal founder of FlyH2 and the company’s CEO. “The Dragonfly V is a unique, highly capable, and versatile drone that is priced for commercial operations but with attractive qualities not typically found in its class. We are excited to bring this product to market and offer our customers a reliable and efficient solution for a diverse array of mission requirements.”

FlyH2 is actively raising capital to take its product to market. The company has a growing list of orders and is accepting pre-orders, secured with a deposit, to reserve a place on the waiting list. Once Dragonfly V is production-ready, the aircraft will achieve up to 24 hours of hydrogen-fuelled flight, depending on payload, making it an ideal platform for extended missions.

The use of fuel cells significantly increases the endurance of the Dragonfly V way beyond that which can be achieved with batteries. Electric propulsion offers ease of maintenance, simplicity, and reliability over internal combustion engines. Dragonfly V’s airframe is unusual in that it is modular, equipping operators with the means to customize and switch payloads in order to meet specific mission requirements. It can carry up to five payload pods beneath the wings making it a true multi-mission platform.

Dragonfly V is a next-generation UAV that stands out in the emerging market of larger industrial-grade drones. The aircraft is designed for hard, every day, high-cadence missions, requiring it to be rugged and hardy. FlyH2 is working on a push-to-take-off and push-to-land control system, allowing the aircraft to be flown by low-time pilots. The company is also looking forward to field trials with its partners in sterile insect technique releases, farm security, wildfire monitoring, and humanitarian aid.

“We are proud of the work that has gone into the development of the Dragonfly V,” said Onno Huyser, co-founder of FlyH2. “Our focus on using STOL instead of VTOL greatly reduces cost, increases endurance, and simplifies maintenance. The aircraft offers a promising future for the commercial drone industry. It is a cost-effective solution for a range of wide-area rural applications, and is ideal for fleet operations”.

FlyH2’s success in the development and testing of Dragonfly V signals a bright future for the award-winning company, and its commitment to innovation will continue to drive its success as it brings Dragonfly V to market.

**7 . Date: 31-03-2023ISR / ISTAR - Tactical - General - PlatformSkyryse celebrates the sixth anniversary of its first unmanned VTOL flightURL: https://www.suasnews.com/2023/03/skyryse-celebrates-the-sixth-anniversary-of-its-first-unmanned-vtol-flight/**

Skyryse, bringing trust, safety, and accessibility of flight for all through its flagship technology, commemorates the sixth anniversary of the first lightweight unmanned vertical take-off and landing (VTOL) flight achieved on March 29, 2017. This aviation milestone has become a driving force in Skyryse’s innovative approach to bringing the joy and freedom of aviation to all as it heads toward FAA (Federal Aviation Administration) certification.

Six years ago, Skyryse set out to develop a technology stack, making flying a general aviation aircraft simpler and safer. Founder and CEO Dr. Mark Groden and a team of four spent nearly a year working to earn FAA (Federal Aviation Administration) approval to fly an unmanned aircraft above 55 pounds (above typical drone weight). The team achieved the first lightweight unmanned flight within three months of their initial seed funding.

Building on the first unmanned flight, the company operated the highest volume, full-service, multimodal door-to-door air-taxi service in the world, leading to the development of the first cost-effective instrument flight rules (IFR) VTOL. Skyryse has grown from a team of four to nearly 100 with a similar objective of making flying simpler and more accessible, democratizing the skies.

Skyryse’s intuitive, highly-automated, airframe-agnostic, and universal flight control system accelerates accessibility, safety, and overall ease of flight by decades. Anyone can complete an entire flight from skids up to set down with the same familiar tap-and-swipe gestures used on a mobile device.

“Celebrating this anniversary is a reminder of our humble beginnings and an extraordinary triumph in our company history,” said Groden of Skyryse. “We continue to celebrate our early achievements to bring increased ease and safety to every flight across general aviation.”

On average, there are more than 300 general aviation deaths each year in the United States, according to the National Transportation Safety Board (NTSB). Most of these incidents occur due to loss of control or pilot error, an issue Skyryse and FlightOS address head-on. Skyryse FlightOS can reduce general aviation fatalities and allow anyone to enjoy the freedom of piloting an aircraft. Skyryse’s FlightOS offers 10-9 safety standards (one-in-a-billion chance of catastrophic system failure) through a full fly-by-wire system with triply redundant, dissimilar architecture, increasing general aviation safety to commercial air transport levels.

FlightOS has already achieved 100% means of compliance for its full-stack technology solution after completing a major System Review with the FAA, including hardware, software, and human-factor components. This achievement accelerates the company’s path toward certification, focusing on simplified vehicle enhancements of already certified airframes.

About Skyryse Los Angeles-based Skyryse is bringing trust, safety, and the accessibility of flight for all through FlightOS, its easy and intuitive integrated flight control system. FlightOS removes many aircraft management complexities during standard flight operations, inclement weather, and emergencies. Skyryse has raised over $260 million from leading investors, including Fidelity Management & Research Company, Monashee Investment Management, ArrowMark Partners, Venrock, Eclipse Ventures, Cantos, Stanford University, and Bill Ford, Executive Chair, Ford Motor Company.

**8 . Date: 30-03-2023MarketSpain’s Alpha Unmanned Systems announces completion of its first investment roundURL: https://www.suasnews.com/2023/03/spains-alpha-unmanned-systems-announcescompletion-of-its-first-investment-round/**

This is the first external financing that has entered the company based in Madrid which manufactures unmanned UAV helicopters

Alpha Unmanned Systems (AUS) an unmanned helicopter (UAV) manufacturer based in Madrid, announces the closing of its first seed round of external investment capital. With sales to nine countries and growing, this is the first external funding to enter the company since its inception nine years ago. This first round, which was led by Dr.Joseph Menaker, co-founder of UAV Factory, will be used to enhance Alpha’s product development and expand its sales and marketing efforts. Also participating in the seed round as investors were Tobias Webster, former CEO of UAVNavigation and current Director of International Business Development at Alpha and Javier Castaño, co-founder of Agnitio and current CFO of Alpha.

Eric Freeman, Alpha’s co-founder and CEO, said, “Alpha is very pleased and optimistic about the support and investment from one of the industry’s leading experts in Joseph Menaker. Joseph knows a lot about the challenges and opportunities in building a fast-growing UAV company. His extensive experience in UAV manufacturing and sales is extremely helpful to us.

The UAV industry is challenging and complex on many levels, and Alpha is dedicated to learning from the best in the industry.”

Dr.Joseph Menaker, says, “Alpha Unmanned Systems is one of the few small independent UAV manufacturers in existence, with outstanding technology and an excellent team of professionals ready to expand production and distribution of their devices. I am pleased to know that my experience in this industry is going to be able to help further develop Alpha and take it to the next level of quality manufacturing.”

Founded in 2014 with Spanish capital and headquartered in Madrid, AUS has made direct international sales to both institutional organizations (governments and the Armed Forces) and private entities, with highly demanding and recurring clients in Spain, Israel, USA, Greece, Indonesia, Georgia, Turkey, European Union, etc. With a highly qualified professional team, and with a clear commitment to its niche market, Alpha is in the “top three” of its sector of activity worldwide.

Its newest product, the Alpha 900, is a helicopter designed and manufactured primarily for missions in the marine environment. With a powerful combustion engine that gives it great autonomy and payload capacity (up to 4 hours and can carry payloads of up to 4 kg), the A900 can take off and land autonomously on and from moving vessels with limited space (small deck). In addition, it is built “STANAG Compliant”, so that all critical systems are redundant. All this makes it a perfect technology for navies, coast guard and/or intelligence operations, surveillance, target approach and/or reconnaissance at sea.

**9 . Date: 26-04-2023Loitering Munition - Mini - ContractAeroVironment Awarded $64.6 Million Contract by U.S. Army for Switchblade 300 Loitering Missile SystemsURL: https://www.suasnews.com/2023/04/aerovironment-awarded-64-6-million-contract-by-u-s-army-for-switchblade-300-loitering-missile-systems/**

AeroVironment, Inc. (NASDAQ: AVAV) received additional funding of $64,565,126 on March 24 from the U.S. Army Tactical Aviation and Ground Munitions (TAGM) project office for the procurement of Switchblade® 300 loitering missile systems. This most recent firm-fixed-price contract increases the total funded amount of Switchblade systems under the original U.S. Army contract to $231,331,651. The contract will be managed by the U.S. Army Contracting Command, Redstone Arsenal, and the systems are scheduled to be delivered by July 2024.

AeroVironment’s combat-proven Switchblade 300 loitering missile systems have been deployed by the U.S. Army for more than a decade and are currently providing real-time ISR and precision strike support on battlefields in Ukraine. Ideal for use against beyond-line-of-sight targets, Switchblade systems were approved by the U.S. government for use by Ukraine and additional nations after the start of the Russia-Ukraine war in 2022. This new U.S. Army contract includes foreign military sales of Switchblade 300 for the first time to France and another allied nation, expanding Switchblade’s footprint internationally.

“Switchblade 300 continues to be a critical weapon in the armed forces of Ukraine’s unmanned systems arsenal,” said Brett Hush, AeroVironment’s vice president and product line general manager for Tactical Missile Systems. “This new contract further demonstrates the global demand for production-ready, combat-proven Switchblade 300 missile systems. We’re honored that Switchblade 300 continues to support the U.S. military and our allies.”

The backpackable Switchblade 300 offers operators the flexibility to rapidly maneuver and employ the system on the ground. Real-time video, GPS coordinates, and wave-off capabilities provide the operator confidence in precisely attacking key targets.

This contract award follows an August 2022 contract modification for additional funding by the U.S. Army for procurement of Switchblade 300 loitering missile systems.

**10 . Date: 11-04-2023MarketPrimoco UAV delivered EBITDA of CZK 65.9 million in Q1 2023 and expects orders of CZK 1 billion in 2023URL: https://www.suasnews.com/2023/04/primoco-uav-delivered-ebitda-of-czk-65-9-million-in-q1-2023-and-expects-orders-of-czk-1-billion-in-2023/**

Primoco UAV increased EBITDA by 510% year-on-year to a record CZK 65.9 million in the first quarter. In the first three months of this year, the Czech manufacturer of unmanned aircraft reported sales of CZK 103.1 million, representing a year-on-year growth of 475%, according to preliminary and unconsolidated data. Since the beginning of the year, the company has won new orders, thanks to which it is on track to meet its goal of signing new contracts of CZK 1 billion in 2023.

“The financial and operational results in the first three months confirm the potential that Primoco UAV can further develop thanks to its products and services. As a result of the current geopolitical situation, many customers around the world have fully realized the important role that UAVs play in defending national territories. However, Primoco UAVs, thanks to their excellent features, continue to be promoted as a viable alternative to manned vehicles in civilian use,” says Ladislav Semetkovský, CEO, founder and shareholder of Primoco UAVs.

An example is the recent sale of two One 150 aircraft, including a ground control station, to an air services customer in Malaysia, which will use the machines to calibrate ILS, VOR/DME and NDB airport guidance systems in the Southeast Asia region. Since January, Primoco UAV has signed two new contracts for the delivery of 11 machines with a total value of EUR 10.75 million (CZK 251 million).

“During April we expect to sign another contract for the delivery of 8 aircraft and control stations in the amount of EUR 12.6 million (CZK 295 million),” says Ladislav Semetkovský. “The financial robustness of the company is also confirmed by its zero debt and independence from public subsidies.”

The results for the first quarter build on the company’s success last year. Full-year unconsolidated sales increased almost ninefold year-on-year to CZK 153 million last year. This resulted in an EBITDA operating profit of CZK 65.9 million against an EBITDA operating loss of CZK 24.6 million in 2021.

The financial results for 2022 and Q1 2023 confirm both the positive outlook for Primoco UAV and are already reflected in the growth of the market value of the company traded on the START market of the Prague Stock Exchange. On 24 March 2023, the share price reached a new record high of CZK 458 per share. The total market capitalization of the company exceeded CZK 2 billion. Since the beginning of this year, Primoco UAV shares have appreciated by 9.27%, for a total appreciation of 79.2% in 12 months. The liquidity of equity trades is also growing. The volume of shares traded in the first quarter of 2023 reached CZK 17 million. Year-on-year, it grew by 458%. Ladislav Semetkovsky (59.35%) and Gabriel Fülöpp (25.41%) remain the majority shareholders.

This year the company continues its certification process according to the NATO military standard STANAG 4703. The company has just successfully completed the certification of the Primoco Engine 340 combustion engine. The final testing phase has now started with the aim of completing the whole process in the summer of 2023. In September 2023, the company will present the architectural design of a new modern factory building, which is planned to be built on the premises of its airport in Písek – Krašovice. In addition to the production itself, which will make maximum use of robotic technologies, the project also includes the flight management of aircraft around the world, a training centre, presentation and administrative facilities. The design for the production process layout and the design of the new factory, which will allow production capacity to be increased to 250 aircraft per year in a single shift, is already complete.

The Annual General Meeting of Primoco UAV SE will be held on 28 April 2023 at 10:00 a.m. at the company’s premises at Výpadová 1563/29f, 153 00 Praha 5 – Radotín. The agenda and draft resolutions are available on its website. Detailed information and data on the company’s performance is available in the annual report published on the company’s website.

Financial results of Primoco UAV SE in Q1 2023 (unconsolidated and preliminary) in thousands CZK:

**11 . Date: 25-04-2023ISR / ISTAR - MALE - General - PlatformTTX-15: The low-cost multi-mission Uncrewed Aerial System with rapid deployment capabilitiesURL: https://www.suasnews.com/2023/04/ttx-15-the-low-cost-multi-mission-uncrewed-aerial-system-with-rapid-deployment-capabilities/**

TTX-15 is a collaboration between British military aviation specialists and the Czech aerospace company Pure Flight s.r.o to produce a low cost, uncomplex, MALE, multi-mission UAS. The aircraft is equipped with an internal modular payload cassette that can be easily swapped to suit various mission requirements. Its name is inspired by the venom of the blue-ringed octopus, and like its namesake, the aircraft is a powerful and versatile asset in any operational environment.

The aircraft’s standout feature is its internal modular payload cassette, which provides an unmatched level of flexibility and adaptability to mission planners. The cassette can be quickly swapped to integrate various payloads, such as loitering munitions, decoys, and sonobuoys. In addition, the aircraft can be disassembled for storage or shipping inside a 40-foot container or towed behind a Land Rover with a road trailer and readied for flight by a team of three people in under 30 minutes. This unique feature allows it to be quickly deployed to any location, including unprepared strips, making it an ideal choice for missions that require rapid response.

TTX-15 is a modification of Pure Flight’s EASA/FAA-certified U-15 Phoenix motor glider, converting it into a STANAG-4671-compliant UAS. The system’s low cost and uncomplex training needs analysis makes it an accessible solution for government operations on all continents.

The aircraft’s ability to remain airborne for over 10 hours make it an ideal platform for medium altitude, long endurance operations. Its internal modular payload cassette can carry 9 loitering munitions, which can each deliver an 8kg HE warhead an additional 200 miles from the aircraft, or electronic warfare decoys to confuse and disrupt RADAR systems at stand-off range. With a change of the cassette, the aircraft can carry up to 16 sonobuoys to improve situational awareness in the naval environment. Shipborne operations make the aircraft a force multiplier in the maritime domain.

TTX Uncrewed Systems is a British company developing a suite of uncrewed capabilities across the maritime and airborne domains which are set to revolutionise low-cost warfighting and subsurface security. The company said “The development of TTX-15 will represent a step forward into a new generation of more accessible and equally capable uncrewed systems, and we are excited to announce further developments in the future”.

**12 . Date: 25-05-2023Cargo - MALE - GeneralDronamics Cargo Drone Takes First Flight, Paving the Way for the Future of DeliveriesURL: https://www.suasnews.com/2023/05/dronamics-cargo-drone-takes-first-flight-paving-the-way-for-the-future-of-deliveries/**

Dronamics, the world’s first cargo drone airline, announced today the successful completion of the first flight of its flagship aircraft, the Black Swan, at Balchik airport in Bulgaria; demonstrating the potential for the logistics industry to enhance efficiency in the transportation of products.

Born out of two brothers’ desire to find a quicker, greener and more affordable way to deliver goods, Dronamics is on a mission to enable same-day delivery for everyone, everywhere. This significant milestone is the culmination of months of ground testing and subscale flights. The Black Swan aircraft was remotely piloted by two commercial airline pilots from the Dronamics ground control station.

The successful flight test validates the company’s licensed cargo drone technology for commercial flights in Europe, set to begin later this year, serving a variety of industries, with a fast and cost-effective solution to meet evolving consumer needs.

“Since the day we first imagined what the Black Swan aircraft could look like, we’ve worked towards this flight. Today we’ve made history and are proud to have demonstrated the validity of our drone technology,” said Konstantin Rangelov, Co-Founder and CTO of Dronamics.

“It’s taken an enormous amount of hard work, belief and drive to prove that what we envisioned works. We can now focus on the next step, the roll-out of our commercial operations, and we couldn’t be more excited,” said Svilen Rangelov, Co-Founder and CEO of Dronamics.

About

Dronamics is a leading developer and operator of large, long-range drones built specifically for cargo. Its flagship Black Swan is able to carry 350 kg (770 lb) at a distance of up to 2,500 km (1,550 mi) up to 80% faster, 50% cheaper and with up to 60% lower emissions than alternative modes of transport, including airfreight. This enables same-day shipping over long distances for a variety of industries: from pharma to food, from e-commerce to spare parts. Dronamics is Europe’s first licensed cargo drone airline and IATA’s first Strategic Partner for drones worldwide.

Dronamics has raised a total of $40 million in pre-Series A funding from early-stage funds and angel investors from 12 countries and is co-funded by the European Union under the prestigious European Innovation Council, Europe’s flagship innovation program.

**13 . Date: 26-05-2023Cargo - Tactical - GeneralElroy Air demonstrates autonomous cargo-handling capabilities of Chaparral aircraft at Travis Air Force BaseURL: https://www.suasnews.com/2023/05/elroy-air-demonstrates-autonomous-cargo-handling-capabilities-of-chaparral-aircraft-at-travis-air-force-base/**

Elroy Air, the company leading the race to develop a vertical take-off and landing (VTOL) aerial logistics system for middle-mile commercial shipping, humanitarian aid and military resupply, demonstrated the autonomous ground navigation and cargo-handling systems of its Chaparral aircraft for the United States Air Force senior and executive officers as part of the Golden Phoenix Technology Demonstration Event.

During the live demonstration, a developmental prototype of the Chaparral aircraft’s ground systems performed a series of autonomous manoeuvres without the use of GPS, which can be unreliable or jammed in contested environments. Without intervention from operators, the vehicle located and navigated autonomously to a cargo pod inside a hangar from a distance of 20 meters, then used its robotic grasping mechanism to pick the pod up and secure it to the underside of the vehicle. The system then navigated out of the hangar to the takeoff zone.

“We are proud to partner with the United States Air Force and be here today to demonstrate one small part of the Chaparral’s autonomy, and how it will improve mission efficiency and airman performance when operating in a contested, GPS-denied environment,” said Karl Purdy, Director of Federal Programs at Elroy Air. “The Chaparral’s high levels of autonomy enable multi-capable Airmen to accomplish tasks outside of their core AF specialty. Its scalable logistics support to tailorable force packages enables friendly forces to execute from multiple, austere operating locations.”

The Chaparral is a transitioning “lift + cruise” VTOL aircraft with a full carbon composite airframe and a turbine-based hybrid-electric powertrain for long-range mission capabilities. It was designed to fit in a shipping container or C-130 aircraft, enabling it to be quickly shipped and deployed to missions anywhere in the world.

Designed specifically for logistics, Chaparral has unique capabilities for locating, navigating to, picking up, and dropping off Elroy Air’s lightweight, aerodynamic modular cargo pods. The pods are a core element in the Chaparral airborne logistics system — they can be pre-loaded by ground personnel and picked up by the aircraft’s robotic systems before takeoff. At the delivery location, after the system has landed the cargo pod is lowered to the ground and released.

About Elroy Air Elroy Air is developing industry-first autonomous aircraft systems and software to expand the reach of express shipping to every person on the planet. Building on the powertrain and perception technology enabling the hybrid-electric / autonomous vehicle revolution, its vertical-takeoff-and-landing (VTOL) aerial logistics systems can operate outside of airport infrastructure and evolve the possible in commercial air cargo. The company’s solutions will expand delivery locations and reduce timeframes, provide immediate aid and relief in disaster and firefighting situations, as well as rapid autonomous resupply for troops in the field. The company’s headquarters is in South San Francisco, California and it is financed by world-class venture capital firms including Catapult Ventures, Marlinspike Capital, DiamondStream Partners and Shield Capital, strategic investors including Lockheed Martin Ventures, and pioneering angel investors including early Uber executives.

**14 . Date: 02-05-2023ISR / ISTAR - Small - General - PlatformQuantum Systems announces the launch of Trinity™ ProURL: https://www.suasnews.com/2023/05/quantum-systems-announces-the-launch-of-trinity-pro/**

Quantum Systems GmbH, the aerial intelligence company that provides multi-sensor data collection drones to commercial customers and government agencies, today announced the launch of Trinity Pro – the futureproof mapping drone designed to adapt to changing requirements and accelerate decision-making through aerial data with a high-level of safety and ease of use.

The Trinity Pro, with its broad range of sensors, further improves the ROI from its highly successful predecessor and firmly places itself as the premier fixed-wing VTOL drone.

Addressing the ever-changing needs of the commercial market

The Trinity Pro, with its state-of-the-art flight control system, allows for continued adaptation and evolution to meet ever-changing industry requirements.

Designed with the needs of tomorrow’s data consumers in mind, the Trinity Pro provides an expanded feature set, capturing and delivering more data in less time than ever before.

The Trinity Pro transforms drone capabilities while remaining easy to operate, and simple to integrate into existing workflows.

With minimal downtime and low maintenance requirements, the Trinity Pro positions itself as the easiest to use, and highest performance fixed wing/VTOL drone on the market today.

Focusing on hardware-software synthesis

The Trinity Pro is an advanced unmanned aerial system (UAS) designed to adapt to changing demands, provide additional connectivity, and accelerate decision-making. At the heart of Trinity Pro is the Quantum-Skynode autopilot, utilizing a Linux mission computer. This provides additional onboard computing power, increased internal storage, versatility, and seamless interoperability. These advanced avionics systems enable AI readiness for the platform, support for downstream integration of next-generation sensors and provide cutting-edge safety features during field operations.

Included in the Trinity Pro system is Quantum-Systems’ proprietary operations software, QBase 3D, and an ever-expanding portfolio of industry workflow and software integrations, which eliminate complex mission setup processes and maximize ROI in terms of cost and time efficiency.

The Trinity Pro’s new capabilities include planning functions for missions requiring take-off and landing at different locations, allowing for efficient and safe long corridor flights and BVLOS operations. The platform also incorporates advanced self-diagnostics to ensure smooth and safe operation.

Trinity Pro launches alongside a new customer portal, an online solution for managing individual drones and fleets, training, and support activities. Users can easily access support, training materials, documentation, and online courses to enhance their skills and earn certifications.

Technical advancements

Trinity Pro now includes an enhanced terrain-following system, which significantly improves safety during operations. Additionally, improvements to trigger point calculations results in improved image overlap and higher data quality. Trinity Pro also features automatic wind simulation for crash avoidance in bad weather and a linear approach for landing.

Furthermore, Trinity Pro is equipped with a downfacing LiDAR scanner that provides highly accurate ground avoidance and landing control. The system features USB-C ports for faster data transfer. Trinity Pro is protected against dust and water damage and features increased wind limits of up to 14 m/s in cruise mode (handling gusts up to 18m/s) and 11 m/s during hover.

“Hundreds of customers across various industries, including mapping, surveying, forestry, utilities, and construction, rely on the Trinity platform in their daily operations. The new capabilities of Trinity Pro make it even easier for professionals to expedite data collection and management, operations, and ultimately improve decision-making. Through an enhanced user experience and streamlined integration of future technologies, we are building on the success of the Trinity platform to help customers take advantage of aerial intelligence at scale,” said Florian Seibel, CEO of Quantum-Systems GmbH.

Built on the legacy of the Trinity F90+ UAS

The Trinity UAS (launched in 2017) was designed to streamline the complex process of collecting aerial data. Since then, the Trinity platform has continued to improve in its performance and functionality, and additional features have been introduced to make the technology even more accessible and usable for daily operations.

With drone adoption continuing to rise, worldwide customers are utilising the Trinity platform to gather more aerial data than ever before to optimise their business processes.

The platform has already accumulated over 75,000 flight hours and continues to innovate in response to the increasing demand for automation, data quality, and safety assurance.

Today’s announcement builds upon Trinity’s established success in supporting professionals across various industries, and it introduces novel solutions to meet even the most demanding requirements of commercial users.

**15 . Date: 30-05-2023Component - General - HardwareThe world’s first ice protection solution for UAS approved by the Norwegian Ministry of DefenseURL: https://www.suasnews.com/2023/05/the-worlds-first-ice-protection-solution-for-uas-approved-by-the-norwegian-ministry-of-defense/**

Atmospheric icing has long been one of the greatest obstacles to UAS operations as most UAS platforms are designed for fair weather and warmer climates. While the theater of war moves toward colder climates, allied forces are in need of solutions that make UAS applications reliable in these challenging conditions.

May 30th, 2023, Trondheim, Norway. UBIQ Aerospace has successfully completed a demonstration of its proprietary autonomous ice protection solution, D•ICE, in collaboration with the Norwegian Ministry of Defense (MoD), the Norwegian Armed Forces, and the Norwegian Defense Research Establishment.

“We are impressed with UBIQ Aerospace’s innovative solutions and their ability to tackle complex challenges like extreme cold weather and in-flight icing,” says Staff Sergeant Jarle Mossing, UAS instructor, Norwegian Army Land Warfare Centre. “Their demonstration showcased some truly impressive capabilities, and we look forward to getting access to their solutions and applying them to our most pressing cold-weather challenges.”

The D•ICE solution consists of several modules that protect all icing-exposed aircraft components, enabling operations and sustained flight in potential and known icing conditions.

“D•ICE has been designed with the specific size, weight and power (SWaP) limitations of UAS in mind,” says Kasper Trolle Borup, Chief Technology Officer at UBIQ Aerospace, “I’m thrilled that we can now offer the world’s lightest and most energy-efficient ice protection solution for all types and sizes of uncrewed and crewed aircraft. The D•ICE solution is truly autonomous; it is modular and can be fitted onto any flying platform. We are excited as we move into a new phase where we work with leading UAS providers to deploy D•ICE globally.”

The D•ICE solution will be flying with tactical UAS OEMs by the end of 2023 and deployed with NATO allied forces in 2024. Off-the-shelf solutions can be ordered now. Sign up here to be the first to know.

**16 . Date: 20-06-2023PartnershipPrimoco UAV and Airbus Defence and Space sign MOUURL: https://www.suasnews.com/2023/06/primoco-uav-and-airbus-defence-and-space-sign-mou/**

Primoco UAV unmanned aerial vehicles have gained significant market share in recent years with continuous growth in the number of systems operated worldwide. With the Primoco UAS (unmanned aerial system) not only compliant to the latest European Union UAS regulation but also compliant with NATO EMAR and STANAG standards, it is the system of choice for customers who seek a platform able to meet strict regulatory requirements with high effectiveness and operational safety. Primoco UAS are authorised to operate in numerous European countries including Germany, Spain, Denmark, Czech Republic, Slovakia, Iceland and many others based on the cross-border acceptance of the OEM´s certification. Its EU operational approval was also a subject to recent successful audit performed by the national aviation authority as a part of EASA supervision of the implementation of UAV regulations.

The tripartite MoU aims to bring together each party ́s expertise, paving the way for fruitful cooperation. Airbus Defence and Space will contribute with its long-lasting and proven experience in airworthiness matters and will focus through its subsidiary Airbus DS Airborne Solutions, on the international UAS services market in the commercial and law enforcement domain.

“The relevance of UAS is increasing exponentially in defence, as we currently witness in Ukraine. It is also quickly becoming a factor in commercial applications for border and coastal security, fire monitoring, search and rescue, connectivity or agriculture and smart farming,” said Mike Schoellhorn, CEO of Airbus Defence and Space. “We have been pioneering unmanned platforms since many years. Our collaboration with Primoco is an additional element of building a European ecosystem of a universe of UAVs, both at the service of our armed forces and of society in general.”

The CEO and founder of Primoco UAV SE, Mr. Ladislav Semetkovský considers the MoU with Airbus Defence and Space to be a turning point: “Airbus Defence and Space is a global leader in aerospace solutions in more than 130 countries. Its knowledge base, including advanced research activities, experience with the introduction of sophisticated systems and breadth of portfolio across various platforms will allow us to explore the new capabilities of our UAS systems at a completely different level. With our common European background, the results of this cooperation will be primarily beneficial for European industry. We are thrilled by the signing of the MoU as it allows us to elevate our combined UAS potential.”

Primoco UAV develops and produces the One 150 civilian and military unmanned aircraft, capable of flying completely independently according to programmed flight plans. The key features of the aircraft are its size, maximum take-off weight 150 kg, 15 hours endurance, 2000 km range, cruising speed 120 km/h, payload 30 kg and fully automatic take-off and landing. The company focuses on civil and military aerospace applications, particularly in energy, border and coastal security, fire monitoring and search and rescue operations. The company’s aircraft is in operation on four continents. Primoco UAV is a publicly traded company on the Prague Stock Exchange in the PX START market.

**17 . Date: 07-06-2023ISR / ISTAR - Mini - MarketQuantum-Systems Inc. Selected for United States Department of Defense APFIT ProgramURL: https://www.suasnews.com/2023/06/quantum-systems-inc-selected-for-united-states-department-of-defense-apfit-program/**

Quantum-Systems Inc., a leader in electric vertical take-off and landing (eVTOL) aerial intelligence solutions, today announced its inclusion in the second set of projects to receive funding for the United States Department of Defense (DOD) pilot program to Accelerate the Procurement and Fielding of Innovative Technologies (APFIT).

The announcement comes after the Office of the Under Secretary of Defense for Research and Engineering (USD(R&E)) published an official release outlining the 11 DoD program offices that will receive FY23 APFIT funding, with U.S. Special Operations Command (USSOCOM) awarding Quantum-Systems Inc. $20 million.

“We are honoured by DoD’s decision to allocate FY23 APFIT funds to accelerate procurement of our Vector fixed-wing, eVTOL unmanned aircraft system. This will allow us to increase manufacturing capabilities and get our mission-critical technology into the hands of more warfighters sooner, ” said David Sharpin, CEO of Quantum-Systems Inc.

Established by Congress in the Fiscal Year 2022 National Defense Authorization Act, APFIT is a competitive, merit-based program with the goal of helping companies to expeditiously transition and field technologies.

**18 . Date: 20-06-2023General - SoftwareRed Cat and Athena AI announce breakthrough artificial intelligence and computer-vision capabilities for Teal 2 military-grade droneURL: https://www.suasnews.com/2023/06/red-cat-and-athena-ai-announce-breakthrough-artificial-intelligence-and-computer-vision-capabilities-for-teal-2-military-grade-drone/**

Red Cat Holdings, Inc. (Nasdaq: RCAT) (“Red Cat” or the “Company”), a military technology company integrating robotic hardware and software to protect and support the warfighter, today announces it has completed the second phase of its artificial intelligence and computer-vision partnership with Athena AI.

Athena was first announced as a partner for Red Cat’s Teal 2 military-grade drone in March. Now, by processing video that the Teal 2’s thermal-imaging sensor recorded during a nighttime test flight, Athena’s technology has successfully performed target recognition and battle tracking. This capability allows commanders fast decision-making on the battlefield with artificial intelligence assistance.

“Nighttime computer-vision capability is a Teal 2 add-on we support for users who need high-value data at night,” said George Matus, founder and CEO of Red Cat subsidiary Teal Drones. “The images and insights that Athena’s technology deliver are outstanding. Athena’s battle-tracking capabilities and artificial intelligence, combined with Teal’s best-in-class drone, give warfighters the unfair advantage.”

Australia-based Athena, an AI-enabled military decision-support company, has licensed to Red Cat its proprietary computer-vision architecture, which allows high-speed tracking of objects and, at slower speeds, in-depth data exploitation. Athena’s solution can identify weapons, humans and other targets at night, as well as Identification Friend or Foe (IFF) markers, such as Cyalume HALOs and IR beacons.

“Unlike a lot of other drones in the sUAS quad space that aren’t MISB-compliant, the Teal 2’s KLV metadata unlocks the full decision-suite support of Athena AI,” said Athena CEO Stephen Bornstein. “This combination of a nighttime sUAS with live-vehicle metadata allows for real-time situational awareness to support battle tracking, common operational picture (COP) at higher echelons of command, and accurate targeting.”

Officially launched in April, the Teal 2 is designed to Dominate the Night™ and arrives as the world’s leading sUAS for night operations. The Teal 2 is the first sUAS to be equipped with Teledyne FLIR’s new Hadron 640R sensor, providing end users with the highest resolution thermal imaging in a small form factor. The Teal 2 also offers the latest intelligence, surveillance and reconnaissance (ISR) technology, delivering time-critical information and enabling operators to make faster, smarter decisions. The Teal 2 airframe has been designed as an open platform that can add software features such as Athena AI, and those combined products improve Red Cat’s gross margins.

Red Cat will exhibit the Teal 2 at the Modern Day Marine expo in Washington, D.C., from June 27-29.

About Red Cat Holdings, Inc.

Red Cat (Nasdaq: RCAT) is a military technology company that integrates robotic hardware and software to provide critical situational awareness and actionable intelligence to on-the-ground warfighters and battlefield commanders. Its mission is to enhance the effectiveness and safety of military operations domestically and globally – and to “Dominate the Night™.” Red Cat’s suite of solutions includes Teal Drones, developer of the Teal 2, a small unmanned system with the highest resolution imaging for nighttime operations, and Skypersonic, a leading provider of unmanned aircraft for interior spaces and other dangerous environments. Learn more at https://www.redcatholdings.com.

**19 . Date: 15-06-2023Partnership - SoftwareShield AI and Kratos Team up to Integrate AI Pilot on Valkyrie XQ-58URL: https://www.suasnews.com/2023/06/shield-ai-and-kratos-team-up-to-integrate-ai-pilot-on-valkyrie-xq-58/**

Kratos Defense & Security Solutions, Inc. (Nasdaq: KTOS), a Technology Company in the Defense, National Security and Global Markets, and Shield AI, Inc., a defence technology company building the world’s best AI pilot, have signed an agreement to integrate and bring to market an AI pilot built by Shield AI for Kratos’ XQ-58 Valkyrie, making real the concept of crewed-uncrewed teaming for jet aircraft.

“Ukraine is losing 10,000 drones per month due to Russian electronic warfare – primarily because the Russians are jamming communications and GPS. If an uncrewed aircraft is unable to operate without GPS and without communications, it will be near useless in future conflicts,” said Brandon Tseng, Shield AI’s co-founder and President, who is also a former Navy SEAL. “AI Pilots enable teams of aircraft to intelligently execute missions without GPS and communications. When you take an incredible, affordable uncrewed jet aircraft like the XQ-58 and pair it up with our AI pilot, you create a game-changing strategic deterrent.”

“The Valkyrie is one of a very few uncrewed jet aircraft that are flying today, ramping in production and are ready for AI pilot integration. Close integration and access with Kratos on the XQ-58 will enable the productization of intelligent uncrewed jet aircraft on a timeline that is, quite frankly, going to shock some people. Ultimately our AI pilots will be flying many uncrewed jet aircraft, but I can’t think of a better-uncrewed jet to start with than the Valkyrie,” said Ryan Tseng, Shield AI’s co-founder and CEO.

Shield AI has developed a combat-deployed AI pilot that has flown on a variety of platforms, including a quadcopter, their own manufactured Group 3 unmanned aircraft system called the V-BAT, and a modified F-16 fighter jet.

Kratos has active production lines producing approximately 150 jet drones annually, including Valkyrie, and a family of affordable, expendable, and attributable tactical jet drones flying today, including Tactical Firejet, Mako, Valkyrie and others, with actual known cost points of approximately $400,000 to $6.5 million and multiple contracts with the United States Air Force, Navy, Army, Marine Corps and others.

“By taking the most cost-efficient, proven, existing and in production uncrewed jets, with key performance capabilities, and pairing them with the most intelligent, capable, and proven AI pilots, Kratos and Shield AI are uniquely positioned to rapidly bring the first and best crewed-uncrewed teaming aircraft to market,” commented Eric Demarco, CEO of Kratos.

**20 . Date: 15-06-2023ISR / ISTAR - Mini - ContractWingXpand Scores Seven Figure Contract with U.S. Air Force to Ruggedize its’ 7ft Backpackable Aircraft and Develop Fire Spotting Software URL: https://www.suasnews.com/2023/06/wingxpand-scores-seven-figure-contract-with-u-s-air-force-to-ruggedize-its-7ft-backpackable-aircraft-and-develop-fire-spotting-software/**

The U.S. Air Force has awarded WingXpand a seven-figure contract for the customization and ruggedization of its unique 7ft backpackable aircraft.

This upgraded aircraft will not only withstand more rigorous conditions, but it will also be equipped with advanced fire spotting software, transforming it into a crucial tool in wildfire detection and prevention. This notable contract underscores WingXpand’s pioneering role in the field of aerial intelligence and its significant contributions to national security and environmental safety.

The new aircraft combines size, power, and versatility. Although compact enough to fit into a backpack, it offers more than two hours of autonomous flight time while carrying two pounds of customizable sensors for data collection. This capability is invaluable across various industries, like public safety, agriculture, and inspections, allowing comprehensive and flexible aerial surveys, more safely and effectively.

At the heart of the aircraft is a smart computer with Edge AI, a cutting-edge technology that enables the aircraft to detect early signs of wildfires autonomously. By identifying potential threats early, emergency services can respond faster, saving homes, wildlife, and most importantly, human lives.

James Barbieri, CEO and Co-Founder of WingXpand, expressed his pride in the company’s latest achievement, “Our collaboration with the U.S. Air Force and the contract we’ve secured emphasizes the innovative work we do. Not only have we developed an easy and powerful aircraft, but our AI technology will also contribute significantly to preventing wildfire loss. We’re excited to bring such a valuable tool to the U.S. Air Force and the nation.”

The aircraft’s ability to fly for extended periods and carry a significant payload, combined with the advanced AI technology, is a game-changer. The U.S. Air Force’s investment underscores the significance of WingXpand’s technology and opens the door to future collaborations with other defense entities.

WingXpand will share more about the upgraded aircraft and its AI detection system at the Energy Drone and Robotics Summit in Houston, Texas, June 12th-14th.

**21 . Date: 17-07-2023ISR / ISTAR - Mini - General - PlatformEvent 38 Releases E400 Variant ISR DroneURL: https://www.suasnews.com/2023/07/event-38-releases-e400-variant-isr-drone/**

Event 38 Unmanned Systems Inc, a leading manufacturer of unmanned aerial vehicles, has announced the release of a new variant of its flagship product, the E400 ISR.

The E400 ISR drone is designed for intelligence, surveillance, and reconnaissance missions and is designed for applications such as search and rescue, law enforcement, and military operations. The new variant of the E400 ISR comes with several enhanced features that make it an even more versatile tool for professionals in various fields.

One of the most notable features of the new E400 ISR is its extended flight time of up to 2.5 hours. This longer battery life allows for more extended surveillance operations, giving operators a greater range and flexibility when gathering intelligence and conducting reconnaissance missions.

The E400 ISR drone is also equipped with a 40x zoom EO/IR camera that captures high-resolution images and videos. The camera’s impressive zoom capabilities allow for more detailed imaging of targets and greater accuracy when tracking moving objects.

In addition, the E400 ISR boasts an impressive range of up to 10 miles, giving operators the ability to cover a larger area and gather data from greater distances.

“Event 38 Unmanned Systems is dedicated to providing professionals with the most advanced and reliable unmanned aerial vehicles,” said Jeff Taylor, CEO of Event 38 Unmanned Systems.

“The new variant of the E400 ISR drone represents our commitment to pushing the boundaries of what is possible and delivering cutting-edge technology to our customers.”

**22 . Date: 17-07-2023MarketPrimoco UAV, Czech UAV manufacturer, doubled its sales and profit in the first half of the year. Its share price increased by 75%URL: https://www.suasnews.com/2023/07/primoco-uav-czech-uav-manufacturer-doubled-its-sales-and-profit-in-the-first-half-of-the-year-its-share-price-increased-by-75/**

Primoco UAV more than doubled its sales year-on-year to CZK 213.4 million in the first half of 2023. EBITDA was over CZK 100 million for the first time in the company’s history and it also more than doubled compared to the same period last year. Demand for Primoco UAV products and services continues to grow and, following the favourable financial results and the outlook for the future, the market capitalization of the company, whose shares are listed on the START market of the Prague Stock Exchange, is also growing. Since the beginning of the year, the share price has increased by more than 75% to CZK 720 per share. The market value of Primoco UAV is almost CZK 3.5 billion.

Primoco UAV has expanded its successful business in the first half of this year, once again recording dynamic growth in all key metrics. The year-on-year more than doubling of sales and profit is mainly due to the increased demand for unmanned aerial vehicles, which Primoco UAV develops and manufactures in the Czech Republic. “During the second quarter of 2023, we closed our largest single contract to date for the delivery of 18 aircraft for a European customer. However, beyond Europe, where customers only fully understood the high added value of UAVs after the Ukraine conflict, we are also seeing increased interest in our technology in Asia and Africa,” said Ladislav Semetkovský, CEO, founder and majority shareholder of Primoco UAV.

This year Primoco UAV has already concluded new contracts for the supply of 29 UAVs with a total value of CZK 515 million. According to the company’s management, negotiations on new orders for the production of 14 more UAVs for non-European customers are at an advanced stage, with completion expected in the third quarter of 2023. Last year, the value of new contracts amounted to CZK 400 million with a total of 22 UAVs ordered.

At the end of the first quarter of 2023, Primoco UAV estimated that this year’s new orders would reach CZK 1 billion, based on concluded contracts and negotiations with potential customers. “The results of the first half of the year make it possible to confirm this outlook and unless there is a sudden change in the economic environment in which Primoco operates, it is possible that we will even exceed this estimate, perhaps to CZK 1.2 billion.” Semetkovský added. “With the growing number of aircraft delivered in total, revenues from service, maintenance and crew training are also growing.” The company expects full-year revenues to reach CZK 750-850 million this year based on orders placed, the company’s production capacity and expected deliveries.

The company’s favourable economic results for the first half of the year and the outlook for further growth in the future are also reflected in the value of Primoco UAV shares traded on the Prague Stock Exchange. Since the beginning of the year, the share price has grown by more than 75% to CZK 720 per share. The shares have appreciated by 148% year-on-year and the market capitalization of Primoco UAV is now almost CZK 3.5 billion. In this context, the company confirms its previously announced intention to prepare for the transition of the listing from the START market for small and medium-sized enterprises to the main market of the Prague Stock Exchange in 2024. The transition to the Prime Market would open the way for Primoco UAV to increase its liquidity and thus its inclusion in the main index of the Prague Stock Exchange.

At the same time, Primoco UAV continues with the certification of its UAVs under the NATO military standard STANAG 4703. The whole process has now reached the final testing phase, with the aim of completing everything needed during the autumn of 2023. The company has also started preparing project documentation for the construction of a new factory. It is to be built on land in the area of Primoco UAV’s own airport in Písek – Krašovice. The company will unveil the architectural design in October 2023, and the plan is to launch the new factory in 2027. This will increase production capacity from the current 100 UAVs per year to 250 UAVs, while maintaining single-shift operation. In addition to the maximum level of robotics and automation, the project also includes the flight control of Primoco UAVs around the world and a new training centre for pilots.

The Memorandum of Understanding that Primoco UAV’s CEO signed with Airbus Defence and Space and its subsidiary Airbus DS Airborne Solutions in June is also a very promising step for the future. This document clearly represents a significant milestone for Primoco UAV. It is a confirmation that the world leader in aviation sees the Czech manufacturer as a key pioneer in the field of unmanned platforms. At the same time, it is the first step towards establishing a long-term business relationship. “Airbus Defence and Space is a global leader in aerospace solutions in more than 170 countries. Its knowledge base, including advanced research activities, experience in deploying sophisticated systems, and breadth of portfolio across multiple platforms, will allow us to explore new capabilities of our unmanned aircraft system at a completely different level. Thanks to the common European background, the results of this cooperation will be particularly beneficial for European industry,” said Semetkovský, CEO of Primoco UAV.

Financial results of Primoco UAV SE for the first half of 2023 (unconsolidated and preliminary) in thousands CZK:

**23 . Date: 29-08-2023TrainingU.S. Department of State Chooses Embry-Riddle to Train Drone OperatorsURL: https://www.suasnews.com/2023/08/u-s-department-of-state-chooses-embry-riddle-to-train-drone-operators/**

DAYTONA BEACH, FLORIDA — Embry-Riddle Aeronautical University has been contracted to assist in the development of curriculum and online training for small Uncrewed Aerial Systems (sUAS) operators for the U.S. Department of State’s Bureau of International Narcotics and Law Enforcement Affairs, Office of Aviation (also known as the Air Wing).

“The government has training standards and robust administrative policies and procedures already in place globally for everything that is crewed — but nothing that is uncrewed,” said Dr. Scott Burgess, associate professor of Aviation and principal investigator on the project.

That’s where Embry-Riddle comes in. An established leader in uncrewed systems application and safety — Embry-Riddle became the first academic institution in the world to receive the Trusted Operator certification from the Association for Unmanned Vehicle Systems International (AUVSI), in 2018 — The university will lend its expertise in designing and administering a standardized training program that could potentially be used by government employees, law enforcement entities and civil aviation authorities all over the world.

“Their intent is to standardize sUAS training, certification and standardization globally,” Burgess added. “Our job is to offer our existing sUAS professional education, thus enabling their crews to perform to a set standard, as well as assist in setting conditions that provide a level of knowledge, skills and abilities equivalent or surpassing established international sUAS crew standards.”

The final step will be to design courseware in conjunction with the Air Wing and offer training to students, earning them an industry certification in sUAS.

“The Worldwide Campus Department of Flight has worked aggressively over the past six years to raise-the-bar for UAS operational integration, training and standardization into various commercial and governmental disciplines, and the federal government came to us for a reason,” Burgess added. “They have been very open to our ideas, due to the fact that our strength in these areas is combined with our knowledge in aviation safety. The DoS has also encouraged further ideas to establish a noteworthy program.”

Those new ideas will be mined from a wealth of industry experience and various projects led by Embry-Riddle to help push drone technology forward. In 2021, for instance, the university earned a first-of-its-kind waiver to begin training aspiring drone pilots remotely through online video streaming platforms. The Department of Flight has a long history of supporting government agencies, such as the FBI, Daytona Beach Police Department, South Florida Water Management District, Conservancy of SW Florida, Oklahoma Department of Emergency Management and the Government of the Bahamas. Around the same time, Embry-Riddle was awarded nearly $2 million from the Federal Aviation Administration (FAA) to collect risk-assessment data that will help integrate UAS safely into the National Airspace System.

Researchers at Embry-Riddle also continue to leverage uncrewed systems in creative ways to solve real-world problems. Some of those applications are safety-focused — such as using drones to improve tactical response against active shooters, or deploying them into hurricanes to more accurately predict storm developments. Other applications might surprise you — such as using drones to map ancient cities.

“We are very pleased to partner with the U.S. Department of State, Bureau of International Narcotics and Law Enforcement Affairs Air Wing in this endeavor,” said Dr. John R. Watret, FRAeS, chancellor of Embry-Riddle’s Worldwide Campus. “As leaders in UAS education programs, we are extremely well equipped to support these operators and ensure they receive the highest level of training.”

Burgess is leading the project along with fellow drone experts from the College of Aviation at Embry-Riddle’s Worldwide Campus: David Thirtyacre, Department of Flight chair, and associate professors Joe Cerreta and Anthony Galante.

**24 . Date: 21-09-2023ISR / ISTAR - Small - RegulationA-techSYN win awarded UK flight approvalURL: https://www.suasnews.com/2023/09/a-techsyn-win-awarded-uk-flight-approval/**

A-techSYN have been successful in obtaining flight permission from the UK Civil Aviation Authority (CAA) to operate their CGT50 VTOL UAV (MTOW 60Kg) in UK airspace.

Adnan Cetinkaya fo A-techSYN commented on the decision today, “This is a significant milestone, and it sets the stage for a busy and productive period in the upcoming months as we are engaged in various UAV-related activities and projects.”

The CGT50-VTOL is a 4,71 m wingspan T-Tail UAV. It uses electric powered motors for takeoff and landing and does not require a runway or catapult. It is a composite airframe with 5 kg payload capacity, powered by a petrol engine. The low fuel consumption enables a safe endurance of 6 hours. The CGT50-VTOL can takeoff from a table and land on a 5×5 m surface with high accuracy.

The UAV has a 55 kg MTOW (including payload). It can be operated by just two people. Using A-techSYN’s AvionicsMini Flight Control System, flight missions are carried out fully autonomous!

**25 . Date: 22-09-2023Cargo - MALE - General - PlatformISS Aerospace and Marshall Futureworx to develop VTOL Heavy-Lift Unmanned Aircraft System (HLUAS)URL: https://www.suasnews.com/2023/09/iss-aerospace-and-marshall-futureworx-to-develop-vtol-heavy-lift-unmanned-aircraft-system-hluas/**

ISS Aerospace (www.issaerospace.com) supported by Marshall Futureworx (www.marshallfutureworx.com) is delighted to reveal that it has been awarded a £500,000 grant through the Defence Technology Exploitation Programme (DTEP), delivered by the Defence and Security Accelerator (DASA) and InnovateUK. This will fund a project to develop a VTOL Heavy-Lift Unmanned Aircraft System (HLUAS). DTEP is sponsored by the MOD’s Directorate of Industrial Strategy and Exports (DISE).

Using an innovative hybrid-electric gas turbine powerplant, our solution delivers extended range, endurance and a payload significantly greater than current rechargeable Lithium Polymer batteries, and without the need for complex electrical infrastructure for re-charging batteries in the field or at sea. Fuel will be widely available Jet A1 or diesel.

The HLUAS will provide a payload of up to 250kg and have a potential range approaching 100km. It will meet the demanding requirements of both defence & security clients by transporting large payloads to and from small naval platforms and ground pads without the need for a runway. It will outperform crewed alternatives by increasing scale and efficiency of operations while improving safety. Cross-cutting technology ensures seamless execution of missions, enhancing operational capacity across roles from logistics to reconnaissance.

The HLUAS employs an open architecture, ensuring a flexible and adaptable software and payload interface which is key to enabling support to a diverse array of potential cargo types, while also ensuring the safe carriage and operation of equipment. These capabilities are designed for integration with broader enterprise and industrial systems. The HLUAS will deliver operational potential to expand existing logistics and surveillance networks through the addition of autonomous nodes. This expansion enhances operational capabilities, particularly in congested and complex battlefield and logistic support environments.

It will be designed to be certified to both Civil and Military Aviation Airworthiness requirements using Marshall’s UK CAA and UK MAA Design, Manufacturing and Flight Test Organisation approvals.

“We are excited to have been selected for funding in DTEP Cycle 1. Our Heavy Lift UAS will be capable of carrying a diverse range of payloads and will therefore be able to fulfil numerous potential roles for both military, commercial and off-shore support operators. We have worked with DASA on numerous occasions – this time through DTEP – and our relationship with them continues to be a positive and productive experience. We have already collaborated successfully with Marshall Futureworx on Project Lilypad (https://marshallfutureworx.com/lilypad) and look forward to building on this relationship.”

Ryan Kempley

CEO & Founder, ISS Aerospace

“We are delighted to support ISS Aerospace in the development of the Heavy Lift UAS, this builds on our established relationship building highly autonomous drones for the offshore sector and other industries. The support we have committed to provide leverages our expertise in civil and military platform certification, lightweight composite aerostructures and integrated programme management. The combined strengths of ISS Aerospace, Marshall Futureworx and the broader Marshall Group, offers the potential to develop a world-class Heavy Lift UAS solution, capable of meeting the needs of both the military and commercial markets both domestically and abroad.”

**26 . Date: 18-10-2023ISR / ISTAR - Small - RegulationAlpha Unmanned Systems obtains CAE certificateURL: https://www.suasnews.com/2023/10/alpha-unmanned-systems-obtains-cae-certificate/**

The A900 system from Alpha Unmanned Systems(AUS), acquired by the DGAM for the Matacán Schools Group (GRUEMA), has successfully completed the process of obtaining its Certificate of Airworthiness for Experimentation (CAE).

This certificate has been issued by the Deputy Directorate General of Inspection, Regulation, and Defense Industrial Strategy (INREID) and authorizes the Alpha Unmanned Systems’ A900 to be operated as an aircraft within the fleet of aircraft belonging to the Armed Forces.

For Alpha Unmanned Systems, obtaining the CAE for their A900 system is of great importance, as it represents a further step towards obtaining the Type Certificate and eliminates the need for additional procedures to obtain other CAEs for new A900 systems.

In addition to confirming their A900 helicopter as a reliable and robust product, the CAE ensures that the aircraft is safe and its use is authorized under the Defense Airworthiness Regulations (RAD).

Manufactured by the Spanish company Alpha Unmanned Systems, based in San Sebastián de los Reyes, Madrid, the A900 was acquired as part of the RAPAZ Program, just as they did previously with the two A800 systems operated by the UME, with the aim of providing the Unmanned Aerial Systems Military School (EMUAS) with training capacity in rotary-wing aircraft, which it lacked until now. The unmanned A900 helicopter, along with its control station and redundant data link, will enable EMUAS to provide training on this system to any defense operator.

Thanks to recent international sales contracts, AUS has positioned itself at the forefront of technological advancement and garnered significant interest from prominent navies. In the naval context, their systems operate as squadrons or technological demonstrators for the Greek Navy, the Indonesian Coast Guard, the Spanish Ministry of Defense, and the U.S. Department of Defense. In Spain, they are also utilized in a multipurpose capacity by the INTA and UME.

**27 . Date: 09-10-2023MarketPrimoco UAV SE, Doubles the Profit and Tripled the Revenue in the First Nine Months of the YearURL: https://www.suasnews.com/2023/10/primoco-uav-se-doubles-the-profit-and-tripled-the-revenue-in-the-first-nine-months-of-the-year/**

Primoco UAV SE, the manufacturer of unmanned aerial vehicles, reported sales of CZK 372 million in the year to September 30, 2023, three times more than in the same period last year. Net profit doubled year on year to CZK 126 million. The company’s best-ever financial results reflect the growing demand for Primoco UAV aircraft, spare parts, pilot training, aerial work and other related services. The shares of the company, traded on the Prague Stock Exchange, reached CZK 900 per share at the end of the third quarter, having appreciated by nearly 120% since the beginning of the year. The market capitalization of Primoco UAV exceeded CZK 4 billion.

Czech manufacturer Primoco UAV continues to benefit from strong demand for UAVs and other related services. The company’s Q3 2023 results showed dynamic growth in both revenue and profit, confirming that 2023 is the company’s record year so far. “In the third quarter, we continued to focus on efficient execution of our contracted orders, the volume of which now utilises our existing production capacity and supports further expansion. At the same time, we have completed a new version of the control system, which has increased the level of automation and air traffic safety. The combination of strong demand and continued innovation gives us an excellent foundation for the company to continue to grow at a rapid pace,” said Ladislav Semetkovský, founder and majority shareholder of Primoco UAV.

In the first nine months of the year, the company delivered 22 UAVs to customers, which significantly contributed to the growth of sales and increase in net profit. At the same time, it concluded new contracts for the supply of 33 aircraft and related services with a total value of CZK 690 million. In addition, negotiations for the delivery of a total of 78 aircraft to 8 different customers are now at an advanced stage. “With regard to the level of new business in progress, we confirm our previously published forecast that new contracts concluded in 2023 will reach an aggregate value of CZK 1 billion. For the next 12 months we expect to conclude contracts in the volume of CZK 1.8 billion,” Semetkovský said.

The company’s favourable economic results are also reflected in the price of Primoco UAV shares traded on the Prague Stock Exchange. During the third quarter alone, their price rose by a fifth to CZK 900 per share. The valuation has increased since January 1st by almost 120%. The company’s market capitalisation now exceeds CZK 4.2 billion. After September’s increase of the free float to 18%, Primoco UAV plans to meet the needs of investors from the beginning of 2024 and move from the START market for small and medium-sized enterprises to the main market of the stock exchange. This step is linked to the mandatory introduction of financial reporting in IFRS, which Primoco UAV is now implementing in co-operation with the consulting company EY.

The preparation of project documentation for the construction of a new automated factory on our own land in the area of Písek-Krašovice Airport is also continuing. The company expects to start the building permit procedure in March 2024, construction in 2025 and the new plant is planned to increase production capacity to 250 aircraft per year per shift from 2027, more than triple the current level. The project will also include the construction of a new control centre for the operation of Primoco UAVs worldwide, a state-of-the-art pilot training centre and a research department for new technologies.

Primoco UAV SE is continuing the process of certification according to the NATO military standard STANAG 4703 and maintaining its emphasis on innovation, which has ensured that the One 150 UAVs are among the world’s best in their category. “During the summer, we completed a new software and hardware version of the aircraft’s control system. This is the next step, which, based on flight experience, allows us to move towards full automation and even greater air traffic safety. Primoco UAV has so far invested CZK 3 million in this project alone,” Semetkovský said, adding that Primoco’s approach to innovation played an important role in the decision by Airbus Defence and Space and its subsidiary Airbus DS Airborne Solutions to enter into a memorandum of understanding with the Czech manufacturer in June this year.

Financial results of Primoco UAV SE in Q1-Q3 2023 (unconsolidated and preliminary) in thousand CZK:

**28 . Date: 10-10-2023ISR / ISTAR - Micro - General - PlatformTeledyne FLIR Defense Unveils New Black Hornet 4 Personal Reconnaissance System at AUSA ConferenceURL: https://www.suasnews.com/2023/10/teledyne-flir-defense-unveils-new-black-hornet-4-personal-reconnaissance-system-at-ausa-conference/**

Next-gen nano-drone builds on battle-proven Black Hornet 3 legacy and delivers improved range, endurance, signature and imagery data while providing covert situational awareness to warfighters

Teledyne FLIR Defense, part of Teledyne Technologies Incorporated (NYSE:TDY), is introducing its new Black Hornet® 4 Personal Reconnaissance System at this week’s Association of the U.S. Army (AUSA) conference in Washington D.C.

Black Hornet 4 represents the next generation of lightweight nano-drones, building on its predecessor to deliver enhanced covert situational awareness to small units. A new 12-megapixel daytime camera with superior low-light performance, plus a new high-resolution thermal imager, delivers crisp video and still images to the operator. At just 70 grams, Black Hornet 4 has a flying time of more than 30 minutes, a range greater than two kilometres, and can fly in 25-knot winds. Flight performance has been augmented by new obstacle-avoidance capabilities and an advanced battery.

Compared to small quad-rotor drones, the single-rotor Black Hornet 4 unmanned aerial vehicle (UAV) has an extremely low visual and audible signature, enabling it to identify threats day or night without being detected. Able to launch in less than 20 seconds and well suited for missions in GPS-denied environments, the Black Hornet 4 UAV can be used to rapidly identify targets beyond visual line-of-sight and assess weapon effects in real time.

“Black Hornet 4 takes the features and capabilities that made Black Hornet 3 world-renowned to the next level,” said Dr. JihFen Lei, executive vice president and general manager of Teledyne FLIR Defense. “We’ve worked closely with customers and end users to make this system even more valuable for dismounted soldiers in need of situational understanding or engaged in covert operations, where precise and immediate intel is crucial.

“Black Hornet 4 is future-proof nano-drone technology,” Lei added.

FLIR Defense has delivered more than 20,000 Black Hornet PRS systems to military and security forces in over 40 countries. Black Hornet drones are currently being used in Ukraine through donations made by the British and Norwegian governments, where they have performed successfully in numerous missions under the harshest of environments.

The U.S. Army began acquiring Black Hornets five years ago as part of its Soldier Borne Sensor program and since then has placed orders totalling more than $125 million. In July, the Army awarded Teledyne FLIR a five-year contract worth up to $94 million for additional Black Hornet systems.

Visit Teledyne FLIR Defense at AUSA in Hall A, Booth 1003, to see the new Black Hornet 4, or learn more online. Black Hornet 4 is designed and built by FLIR Defense in Norway.

About Teledyne FLIR

Teledyne FLIR, a Teledyne Technologies company, is a world leader in intelligent sensing, unmanned systems, and integrated solutions for defence and industrial markets, with roughly 4,000 employees worldwide. Founded in 1978, the company develops a wide range of advanced technologies to help professionals make better, faster decisions that save lives and livelihoods. To learn more, visit teledyneflir.com or follow @flir. #AnyThreatAnywhere

About Teledyne Technologies

**29 . Date: 10-11-2023PartnershipAirbus to Provide Sales and Operations Support of Silent Arrow® UAS to European MarketsURL: https://www.suasnews.com/2023/11/airbus-to-provide-sales-and-operations-support-of-silent-arrow-uas-to-european-markets/**

Airbus will also certify the Silent Arrow® GD-2000 1-ton precision cargo glider to operate from the Airbus A400M following a planned series of airdrops in Europe

LOS ANGELES, Nov. 9, 2023 /PRNewswire/ — Silent Arrow today announced the signing of a Memorandum of Understanding between Airbus DS Airborne Solutions GmbH (Airbus), MEL Aviation Ltd and Yates Electrospace Corporation (dba Silent Arrow) to manufacture, distribute and support the Silent Arrow GD-2000 heavy cargo delivery UAS platform for European market segments to include:

The agreement sets forth a three-way collaboration in the field of autonomous cargo delivery by bringing together Silent Arrow airborne cargo delivery capability, MEL Aviation’s expertise in aerospace manufacturing and Airbus’ experience in unmanned aerial services to jointly serve the needs of European customers.

To facilitate the collaboration, Silent Arrow recently granted an exclusive license to MEL Aviation to manufacture the Silent Arrow GD-2000 and its spare parts for UK and EU markets in accordance with ISO AS9100 quality standards.

Airbus will then provide sales, marketing and after-sales support by leading the operational service model for Silent Arrow, to include:

“We are thrilled to take our collaboration with MEL Aviation to the next level with Airbus joining the team to build and lead the service business for Silent Arrow across Europe,” said Chip Yates, Silent Arrow’s Founder and CEO. “The Airbus A400M is the perfect platform for deploying numerous Silent Arrows in tactical resupply, electronic warfare or humanitarian and disaster relief operations and we look forward to achieving A400M certification as part of this exciting program.”

The Silent Arrow GD-2000 is the world’s first heavy payload, autonomous and attritable cargo delivery aircraft designed to carry 1,500 lbs. of cargo over 40 miles when deployed from cargo aircraft such as the Lockheed Martin C-130, Boeing C-17 and Airbus A400M.

About Silent Arrow®: The Silent Arrow® product line consists of three sizes of autonomous cargo delivery aircraft capable of carrying 350 to 1,500 pounds of emergency, disaster relief and humanitarian response supplies anywhere in the world on short notice. Silent Arrow’s engineering team has been awarded more than 20 patents, 6 Fédération Aéronautique Internationale (FAI) aircraft world records and 2 FAI Louis Bleriot medals for disruptive contributions to the aerospace industry. In 2021 Silent Arrow® was selected as a finalist for the Robert J. Collier Trophy as the “Greatest Achievement in Aeronautics or Astronautics in America,”.

**30 . Date: 16-11-2023Cargo - Tactical - General - Engine / PowersourceElroy Air achieves industry-first flight of turbogenerator-hybrid hVTOL aircraftURL: https://www.suasnews.com/2023/11/elroy-air-achieves-industry-first-flight-of-turbogenerator-hybrid-hvtol-aircraft/**

Byron, Calif. – Elroy Air flew the world’s first turbogenerator-hybrid electric vertical take-off and landing (hVTOL) aircraft on November 12 at its test-flight facility in Byron, California – the Chaparral C1. The C1 is an autonomous hVTOL aircraft, with distributed electric propulsion and a turbogenerator-battery architecture. The milestone marks a significant step forward in the company’s mission to enable same-day shipping to every person on the planet and agile, low-risk resupply for Defense.

The Chaparral took flight on November 12 from Byron Airport, where the Elroy Air Team runs flight test operations. Leveraging both its turbogenerator system and high-power batteries the C1 took off vertically, flew for 57 seconds, and landed successfully.

“This is an exhilarating day for our team and the industry as a whole,” said Elroy Air co-founder and CEO Dave Merrill. “In 2017 we had an unconventional idea to develop an autonomous long-range VTOL aircraft that would fill a major capability gap for middle-mile express shipping, humanitarian logistics, and military resupply. On Sunday our Chaparral C1 became the first turbogenerator-hybrid electric hVTOL aircraft to take flight. This marks a major moment for the industry as hybrid-electric aircraft enable the dual benefits of runway-independent safe redundant propulsion, and long-range flight well in excess of battery power alone. Our accomplishment puts Elroy Air one step closer to delivering a transformative logistics capability to our customers and partners.”

Hybrid-electric aircraft represent a critical advancement in the aviation industry. For vertical flight, distributed electric propulsion (DEP) using multiple redundant rotors enables robust and safe operations even in the case of motor failure – a key enabler for autonomy. However, today’s battery-electric eVTOL aircraft designed for Air Taxi and cargo operations are range-constrained due to the energy density limitations of available battery cells, and they must be operated in locations with substantial battery-charging infrastructure. The combination of DEP and turbine-based electrical power generation yields a best-of-both-worlds option first suggested by NASA researchers in 2008. Turbogenerator-hybrid architecture addresses the limitations of all-electric systems by combining a gas turbine-driven generator with batteries – enabling long-range missions (a “must-have” for logistics) without requiring charging infrastructure, as well as safe redundant flight for autonomous operations.

“The use of hybrid electric powertrains is not trivial – balancing battery and turbogenerator power output to respond to load demand requires power management systems that are properly governed to facilitate effective and efficient flight. Such systems for true VTOL and vertical flight capable aircraft are more complex and demanding than for fixed wing systems because of the discrepancies in power requirements in different flight regimes,” explained Ashish Bagai, advanced rotorcraft expert. “This is a major step in the development of hVTOL flight – one that underscores the potential utility value of DEP concepts. It’s very encouraging.”

To develop and bring the world’s first hVTOL air vehicle into flight test, the Elroy Air team overcame substantial technology challenges in electrical power management and structural vibration. The company’s intellectual property and deep accumulated technical experience positions Elroy Air at the forefront of hVTOL aircraft development. Elroy Air’s engineering team is led by Zach Lovering, an aerospace engineer and eVTOL industry veteran who contributed to multiple aircraft development programs at Zee Aero (now Wisk), and subsequently led the pioneering Vahana eVTOL aircraft program at Acubed by Airbus.

“The team at Elroy Air has achieved an exciting milestone with the first flight of their Chaparral aircraft,” said Dr. Mark Esper, 27th US Secretary of Defense and Elroy Air Board Member. “Their work to enable autonomous cargo delivery for the resupply of troops in the field will create a game-changing capability for supporting and sustaining the United States military and allied forces in future campaigns.”

Elroy Air’s Chaparral is in high demand from a number of leading partners in commercial, humanitarian, and defense logistics. Its vehicle backlog – reflected in LOIs and MOUs with a growing number of deposit-backed agreements – today exceeds $3Bn in future revenues. Since starting work with AFSOC in 2019, the company now holds 3 active contracts with US Air Force (SBIR Phase II, SBIR Phase III, and TACFI). The Chaparral’s capabilities address an urgent operational need for logistics in contested environments where today’s alternative is dangerous resupply missions using expensive crewed aircraft, a demand reflected by its active partnerships with the Defense community.

“AFWERX is excited to see the progress in hybrid electric powertrains for transformative vertical lift aircraft. Hybrid flight marks a key technical milestone for the industry to increase VTOL range and payload while validating the investment strategies of both AFWERX Prime and AFVentures TACFI program,” said Col. Elliott Leigh, AFWERX director and chief commercialization officer for the Department of the Air Force.

“They say it takes a village. Without the support of our investors, commercial partners, and the Department of the Air Force’s visionary Agility Prime effort we would not be this much closer to making our vision a reality,” said Elroy Air co-founder and Chief Product Officer Clint Cope.

“This groundbreaking initial flight of the C1 will be followed by an ongoing envelope expansion campaign in coordination with the US Air Force in which we’ll advance the vehicle’s demonstrated flight capabilities through subsequent modes of airborne operations,” said Elroy Air VP of Engineering Zach Lovering. “These modes include expanded hover, system identification, transition, and cruise flight.”

Elroy Air is developing industry-first autonomous aircraft systems and cutting-edge software, revolutionizing the world of express shipping. Leveraging hybrid-electric and autonomous vehicle technologies, their vertical-takeoff-and-landing (VTOL) aircraft transcend traditional airport limitations, unlocking new frontiers in commercial air shipping, humanitarian aid, and military logistics. From agile, low-risk resupply for troops, to dynamic disaster response and firefighting support, to warehouse-to-warehouse express parcel transport, their technology reshapes logistics possibilities. With headquarters in South San Francisco and flight test operations in Byron California, Elroy Air is backed by premier venture capital firms including Catapult Ventures, Marlinspike Partners, Snowpoint Ventures, and Shield Capital. Strategic investment from industry giants like Lockheed Martin Ventures and support from visionary angel investors including early Uber executives drive the company’s mission to provide same-day shipping to every person on the planet.

**31 . Date: 01-11-2023MarketShield AI Raises $200M, Reaching $2.7B ValuationURL: https://www.suasnews.com/2023/11/shield-ai-raises-200m-reaching-2-7b-valuation/**

Shield AI, the defense technology company building the world’s best AI pilot for aircraft, today announced it has raised $200 million in Series F funding in an oversubscribed funding round. This funding, led by U.S. Innovative Technology Fund (USIT) and co-led by Riot Ventures, with participation from Cathie Wood’s ARK Invest and returning investors Disruptive and Snowpoint, values Shield AI at $2.7 billion.

“We’re building the world’s best AI pilot to ensure air superiority and deter conflict because we believe the greatest victory requires no war. This funding accelerates the scaling of Shield AI’s products, enabling the deployment of intelligent, affordable mass—the most important non-nuclear deterrent for the next 30 years,” said Brandon Tseng, Shield AI’s President, co-founder, and former Navy SEAL.

Shield AI builds an AI pilot called Hivemind, which enables teams of intelligent aircraft to operate autonomously in high-threat environments on the edge, without the need for remote operators, command inputs, or GPS. The technology approach is similar to those in the self-driving car industry and its software stack is aircraft agnostic, allowing Shield AI to provide autonomy to a variety of form factors across the aerospace industry. This announcement comes on the heels of the company’s recent launch of its V-BAT Teams product. This product enables a single human operator to command a minimum of four V-BATs, generating real-time AI-driven flight paths, and exhibiting dynamic read-and-react behaviors autonomously. Except for lethal decision-making, V-BAT Teams can complete missions from start to finish without the need for an operator or pilot.

Concurrently, the company has been diligently working on integrating Hivemind into uncrewed fighter jets, a significant effort supported both through government programs and company R&D. In December 2022, Shield AI, along with its government partners, made aviation history by autonomously maneuvering a modified F-16 in real-world air-combat scenarios. The company continues to fly and test its autonomy on fighter jets and has more autonomous maneuver flight hours of fighter jets than any company in the world.

“The increasing number of military conflicts we have seen over the last 18 months unfortunately paints a sobering view of our future defense technology needs and the important role AI will play,” said Thomas Tull, Chairman of USIT. “Shield AI continues to be a pioneer in this sector, driving much needed innovation by developing state-of-the art AI pilots. We are proud to continue supporting their mission as they leverage these cutting-edge technologies to deter conflict before it begins.”

The funds from the Series F round will be used to:

“As deep-tech investors, we have seen a large swath of autonomy efforts in every realm and Shield AI has a clear lead. Battlefields are increasingly dominated by drone warfare and the enemy is doing everything in their power to make it a hostile environment, including blocking communications and GPS. Modern air forces are flying blind. Shield’s AI pilot doesn’t require GPS or communications because it’s smart and adaptable to the environment. Their AI is trainable and adaptable to many different missions and has flown teams of quadcopters, V-BATs, and modern fighter jets. The closest tech comparable we’ve seen is what Tesla is doing with their self-driving stack. Their combination of market-leading AI technology and top-tier growth is why we are excited to continue to invest in the Company,” said Stephen Marcus, Co-Founder and General Partner of Riot Ventures.

About Shield AI

Founded in 2015, Shield AI is a venture-backed defense technology company whose mission is to protect service members and civilians with intelligent systems. In pursuit of this mission, Shield AI is building the world’s best AI pilot. Its AI pilot, Hivemind, has flown a fighter jet (F-16), a vertical takeoff and landing drone (V-BAT), and a quadcopter (Nova). The company has offices in San Diego, Dallas, Washington, D.C., and abroad. Shield AI’s products and people are currently in the field actively supporting operations with the U.S. Department of Defense and U.S. allies.

**32 . Date: 16-12-2023Loitering Munition - Small - General - PlatformAir-Launched, Tube-Integrated Unmanned System (Altius) 700 first tube launchURL: https://www.suasnews.com/2023/12/air-launched-tube-integrated-unmanned-system-altius-700-first-tube-launch/**

The Uncrewed Aircraft Systems Project Management Office, in collaboration with the U.S. Special Operations Command, executed a successful flight demonstration involving the first launch of the Air-Launched, Tube-Integrated Unmanned System (Altius) 700 air vehicle on Dec. 3, at Fort Campbell, Kentucky. The event marks a significant milestone in the Army’s Launched Effects program. The demonstration, which used a Black Hawk as the launch platform, served as a significant risk reduction event for upcoming Altius 700 test flights. The system was developed as an air vehicle solution to address the size, weight, and power requirements in the approved May 2020 Launched Effects Abbreviated Capabilities Development Document.

Launched effects will bring a critical capability to the Army with advanced teaming between crewed and uncrewed systems to detect, identify, locate, and report pacing threats in contested environments. The transformational capabilities launched effects bring to large-scale combat operations provide Corps, Division, and Joint commanders with effective and timely targeting, enabling fires and effects at the time and place of need. The two-flight demonstration yielded positive data that validates the Altius 700’s performance capabilities across all phases of operation, encompassing launch, flight, landing, and recovery. The insights gained from the demonstration are instrumental to refining the system’s design and operating procedures ahead of the program’s upcoming test flights. The first test flight of the fully integrated launched effects prototype is scheduled to take place early 2024. The test will demonstrate the prototype’s performance with the payloads and mission system controlled by the prototype Scalable Control Interface software. Additional testing will follow, leading up to a final operational demonstration by the end of the fiscal year 2024 and a rapid fielding decision of the launched effects prototype scheduled in 2025.

**33 . Date: 18-12-2023Loitering Munition - Small - General - PlatformM300 Murtajiz loitering munitionURL: https://www.suasnews.com/2023/12/m300-murtajiz-loitering-munition/**

The Murtajiz M-300 is a standoff loitering attack weapon system designed to locate and precisely attack targets. MP-300 LMs are launced from ground-based launchers and controlled remotely or antonomously. MP-300 includes full mission capabilities such as target search, identification and attack.

**34 . Date: 13-12-2023Cargo - Mini - MarketMatternet Receives Authorization from the German Aviation Office to Launch BVLOS Drone Delivery Operations in BerlinURL: https://www.suasnews.com/2023/12/matternet-receives-authorization-from-the-german-aviation-office-to-launch-bvlos-drone-delivery-operations-in-berlin/**

New Drone Delivery Network is First of Its Kind in Berlin with Goal to Connect 13 Hospitals with Europe’s Largest Hospital Laboratory Labor Berlin to Support Transportation of More Than 6 Million Lab Samples Per Year

Matternet, the developer of the leading urban drone delivery platform, today announced that it has received approval from the Luftfahrt-Bundesamt (LBA), Germany’s Federal Aviation Office, to operate the Matternet M2 drone delivery platform beyond the visual line of sight (BVLOS) in the heart of Berlin. This marks the beginning of Berlin’s first ever BVLOS drone delivery network.

Labor Berlin, Europe’s largest hospital laboratory, provides diagnostics for 30 hospitals with more than 24,000 beds, including Charité, the largest university hospital in Europe and Vivantes, the largest municipal hospital group in Berlin. Labor Berlin handles more than 6 million lab samples per year from satellite laboratories across Berlin in its central lab. The drone delivery network aims to connect Labor Berlin’s central lab to affiliated hospitals for ultra-fast delivery of critical samples in the densely populated city. When fully operational, the network will serve millions of patients a year. Operations will formally begin early next year following clearance on federal state level.

“Healthcare systems need a fast, reliable and cost-effective solution to transport lab samples and pharmacy items to ensure patients receive best-in-class care,” said Andreas Raptopoulos, Founder and CEO of Matternet. “We are extremely excited to partner with Labor Berlin, Europe’s largest hospital laboratory, to create the first city-wide healthcare network in the capital of Germany and bring the benefits of drone delivery to the citizens of Berlin.”

The drone delivery network will target emergency diagnostics and will increase operational efficiency as well as cut down on carbon emissions from the nearly 250,000 miles per day that cars travel within the city.

“Collaborating with Matternet enables us to enhance access to vital healthcare options through unmanned drone delivery, benefiting our patients and hospital network,” said Nina Beikert, Labor Berlin CEO. “These operations align with our dedication to innovation and sustainability as drone delivery not only accelerates emergency testing, but also enhances supply chain efficiencies while reducing greenhouse gas emissions.”

Klaus Tenning, Head of Studies and Collaborations and Project Leader for Labor Berlin, adds: “After years of preparation and pioneering work, we are excited to execute our vision for a fully operational network of drones delivering samples throughout our hospital service – to further improve patient care.”

Matternet holds U.S. Federal Aviation Authority (FAA) Type Certification and Production Certification, as well as BVLOS operational approvals from the FAA and the Swiss Federal Office of Civil Aviation (FOCA), in addition to the German LBA approval now. Matternet started delivering lab samples via drone in Switzerland in 2017 and in the US in 2019. It has transported tens of thousands of specimens for Ospedale Regionale di Lugano, University Zürich Hospital and Stadtspital Zürich in Switzerland and, through its partnership with UPS, Wakemed Health and Wake Forest Baptist Health in the U.S.

About Matternet

Matternet is the leading developer of commercial drone delivery systems for urban and suburban environments. The company ships the Matternet M2 drone and Matternet Software Platform and operates its technology directly for customers or in partnership with logistics organizations, such as UPS. Matternet has achieved many industry firsts, including being the first company to be authorized for commercial Beyond Visual Line of Sight (BVLOS) drone delivery operations over cities in Switzerland, the first to launch routine revenue-generating operations in the U.S., and the first to achieve standard Type Certification and Production Certification by the U.S. Federal Aviation Administration. Matternet is partnered with UPS and Ameriflight, who have received approval from the Federal Aviation Administration to operate the Matternet M2 under Part 135. To date, Matternet technology has enabled tens of thousands of commercial flights over dense urban and suburban environments in the U.S. and Europe.

**35 . Date: 09-12-2023Cargo - MALE - General - PlatformReliable Robotics Flies Large Cargo Aircraft with No One On BoardURL: https://www.suasnews.com/2023/12/reliable-robotics-flies-large-cargo-aircraft-with-no-one-on-board/**

Reliable Robotics, a leader in aircraft automation systems, today announced a significant milestone in its work to bring advanced safety-enhancing technologies to market in the United States. Last month’s successful flight of a Cessna 208B Caravan with no one on board was a first for aviation. A remote pilot supervised the uncrewed aircraft from Reliable’s control center 50 miles away.

The Reliable autonomous flight system enables the aircraft to be remotely operated by a pilot on the ground and improves safety by fully automating the aircraft through all phases of operation including taxi, takeoff and landing. Reliable’s system is aircraft agnostic and utilizes multiple layers of redundancy and advanced navigation technology to achieve the levels of integrity and reliability necessary for uncrewed flight. The system will prevent controlled flight into terrain (CFIT) and loss of control in flight (LOC-I), which account for the majority of fatal aviation accidents.

The Cessna Caravan is designed and manufactured by Textron Aviation Inc. Reliable Robotics has been collaborating with Textron Aviation, which includes the Beechcraft, Cessna and Hawker brands, and Textron eAviation focused on sustainable flying. Textron Aviation has delivered more than 3,000 Caravans, proving it to be the world’s most popular turboprop utility aircraft.

“Textron Aviation is committed to delivering continuous aviation improvements and our relationship with Reliable Robotics advances this work,” said Chris Hearne, Senior Vice President of Engineering and Programs, Textron Aviation. “Reliable’s successful flight of an uncrewed Cessna 208 Caravan represents a milestone for the industry in bringing new technology to aviation.”

The Caravan, and other regional cargo aircraft like it, serve an essential role connecting communities and businesses across the United States and around the globe. With a useful load of over 3,000 pounds, and a take-off performance to operate from shorter runways, these aircraft deliver time-sensitive shipments to many places that would otherwise not have next-day or same-day service. Remote piloting will allow even more areas to benefit from this critical service.

ASL Aviation Holdings is a global aviation services company with airlines based in Europe, Asia, Africa and Australia, and has been working with Reliable Robotics since 2022 to explore bringing advanced aircraft automation into its operations. ASL operates a fleet of over 160 aircraft and provides cargo services for the world’s leading express parcel integrators and eCommerce platforms. Reliable Robotics is an original member of ASL’s CargoVision forum of companies involved in pioneering new aviation and propulsion technologies.

“ASL is always innovating to better serve customers, and our partnership with Reliable Robotics is aimed at enabling us to provide reliable, flexible and cost-efficient time-sensitive cargo delivery to smaller unserved areas,” said Dave Andrew, Chief Executive of ASL Aviation Holdings. “This historic flight is a testament to Reliable’s focused leadership in advancing aviation innovation and capability for the industry.”

Reliable Robotics and the U.S. Air Force are working to leverage the significant progress on remote piloting for the Cessna Caravan to jointly examine how this commercially derived technology can be applied to large multi-engine aircraft for cargo logistics, aerial refueling and other missions. Reliable has been working under a series of contracts with the Air Force since 2021.

“This monumental aviation achievement is a great example of how AFWERX accelerates agile and affordable capability transitions for the world’s greatest Air Force,” said Col. Elliott Leigh, AFWERX Director and Chief Commercialization Officer for the Department of the Air Force. “This milestone accelerates dual-use uncrewed flight opportunities, increasing aviation safety and enabling us to bring a broad range of autonomous military capabilities into denied environments.”

The FAA formally accepted the certification plan for Reliable’s autonomous flight system in June of 2023. The certification plan leverages existing regulations for normal and transport category aircraft, and does not require any special conditions or exemptions. With multiple industry-first technical accomplishments and unrivaled FAA certification progress, Reliable Robotics is well positioned to deliver safety-enhancing aircraft automation systems.

About Textron Aviation

We inspire the journey of flight. For more than 95 years, Textron Aviation Inc., a Textron Inc. company, has empowered our collective talent across the Beechcraft, Cessna and Hawker brands to design and deliver the best aviation experience for our customers. With a range that includes everything from business jets, turboprops, and high-performance pistons, to special mission, military trainer and defense products, Textron Aviation has the most versatile and comprehensive aviation product portfolio in the world and a workforce that has produced more than half of all general aviation aircraft worldwide. Customers in more than 170 countries rely on our legendary performance, reliability and versatility, along with our trusted global customer service network, for affordable and flexible flight.

**99 . Date: 30-01-2023ISR / ISTAR - MALE - GeneralSwiss Air Force receives first Israeli dronesURL: https://www.swissinfo.ch/eng/politics/swiss-air-force-receives-first-israeli-drones/48244906**

Material for the first two drones has also been handed over to the air force, namely ground control stations, sensors, as well as logistics and training material, the Federal Office for Defence Procurement (Armasuisse) said in a statementExternal link on Monday. The military aviation authority had issued the necessary certification.

Parliament approved a credit of CHF250 million ($270 million) for the procurement in 2015. The Israeli origin of the aircraft was criticised at the time. The predecessor Ranger drones were taken out of service in 2019.

The new drones should have been in the air since 2019. However, technical problems caused their delay. Armasuisse therefore imposed contractual penalties on the Israeli manufacturer, Elbit Systems, and negotiated additional services, such as certification of the de-icing system.

This content was published on Jun 16, 2022 The Swiss army has carried out the first successful test flight of an reconnaissance drone manufactured by Israel.

The unarmed drones are to be operational for 20 years. They are used for situational and target reconnaissance. However, they can also be equipped to generate an image of the situation on the ground or for electronic reconnaissance. They can be used by day and by night.

The nine-metre-long unmanned aerial vehicles with a wingspan of 17 metres can be used by military and civilian agencies. They can be used, for example, by cantonal command staff, police and rescue services and the border guard corps.

**100 . Date: 18-04-2023Armed ISR / ISTAR - Small - General - ArmamentThales Jackal VTOL drone completes first firing of LMM Lightweight Multirole MissileURL: https://www.thalesgroup.com/en/worldwide/defence/news/new-drone-completes-first-firing-missile-significant-unmanned-air-combat**

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A new versatile drone system capable of multiple types of combat mission over land, sea and air has completed a highly successful first trial firing of a Thales Lightweight Multirole Missile (LMM) to bring the potential of unmanned air combat a step closer to reality.

The JACKAL drone capability has been designed and developed by experts from UK-based Flyby Technology, with Turkish partners FlyBVLOS Technology and Maxwell Innovations providing design engineering and prototyping expertise, to fill a recently discovered gap in modern combat operations.

As a Vertical Take Off and Landing (VTOL) platform, JACKAL is designed to satisfy a number of roles, including Battlefield Air Interdiction, Close Air Support, engaging helicopters in flight and killing tanks, to denying the use of runways and roads.

The trial - sponsored by the Rapid Capabilities Office (RCO) of the Royal Air Force – involved teams from Flyby and the technology giant Thales which also manufactures the LMM.

Within a demanding six-week window, they were able to build two operational JACKAL aircraft and successfully fire two LMMs in an impressive demonstration of agile teamwork.

As a plug-and-play system, new equipment and technologies can be incorporated into JACKAL between missions as well as during continued development. The company says this novel streamlined procurement process ensures that future aircraft are not obsolete before they go into service and will remain relevant for longer. It also gives a pathway to future regulatory compliance and airworthiness standards.

Flyby Technology CEO Jon Parker is a former RAF and Royal Navy fighter pilot and he and his team have brought many years of operational experience to bear in the design of the capability.

The company says many nations cannot afford attack helicopters or access fast jets that are modern enough to survive today’s battlefield. JACKAL can give them the same effect with little risk at a fraction of the price. Because the aircraft was born from the ideas of Harrier pilots, the aircraft takes off and lands vertically, another advantage over traditional fighter jets as there is no need for vulnerable runways. It also means that JACKAL can operate from hidden locations such as woods and urban built-up areas. A unique selling point for JACKAL.

Following the invasion of Ukraine, Flyby Technology was asked to brief the RAF’s Rapid Capabilities Office (RCO) on their new drone system.

The Flyby team also contacted Thales in Belfast - where the LMM is designed and manufactured - to explore the possibility of firing it from JACKAL in a trial.

The Thales team accepted the opportunity to work with Flyby to be the first to fire their LMM (also known as Martlet in the Royal Navy) from a drone in flight. Flyby Technology planned and built two operational aircraft from scratch and fired two LMMs in the demanding timescale of six weeks.

Firing a sophisticated missile is not an easy task under the best of conditions and then only with meticulous planning taking many months. JACKAL then being an unproven, experimental aircraft, just added to the complexity of the challenge says the company.

The Belfast team rose to the challenge magnificently and just six weeks after getting the call, the combined teams successfully fired two LMMs proving that JACKAL had arrived as a devastating combat capability able to fire modern battlefield weapons in flight.

The JACKAL team is now developing plans for productionising the capability, whilst the aircraft is undergoing other enhancements and tactical development.

About Flyby Technology

As a former RAF and RN pilot, Air Warfare Instructor and Senior Weapons Instructor, Jon Parker has also brought to bear his project design, development and management experience gained previously from his role as aviation integration manager for the two new British aircraft carriers.

The original design development, prototyping and testing of JACKAL brought together the formidable warfighting expertise of Flyby together with the rapid prototyping and drone building expertise of partners FlyBVLOS Technology and Maxwell Innovations. This also meant the team could fly and test their aircraft at their dedicated range in Turkey without the regulatory restrictions placed on the flying of drones weighing more than 25 kilos in UK airspace.

Flyby Technology will continue development in Turkey as well as the UK, but is now seeking UK manufacturing partners to build JACKAL at scale. They are also designing weapons perfectly suited to both the JACKAL and its new Attack Drone role.

About Thales in Northern Ireland

With a 60 year heritage in world class engineering, Thales in Northern Ireland is the leading high technology company in the country, employing more than 700 people in the defence and space sectors.

Thales contributes >£50 million to Northern Ireland’s GDP with Thales Belfast’s staff average pay in the top 10% of all employees in Northern Ireland. Thales Belfast also supports an ecosystem of suppliers and 91% of our local procurement in Northern Ireland is with small to medium enterprises (SMEs).

Thales in Northern Ireland is located across two sites. Through the design and production of high precision, high volume effectors and fire control systems, as well as the integration of weapons onto tactical platforms, Belfast has developed into a centre of excellence for Thales’s air defence and surface attack solutions.

Belfast is also home to Thales’s global Space Electric Propulsion Integration Centre, delivered in 2016 with a £6 million investment. The centre was located in Belfast due to the high precision engineering skills already present on site, which were developed through our defence business alongside Invest Northern Ireland investment. Our site in Belfast delivered the first all-electric propulsion module designed and built in the UK, the Spacebus Neo Xenon Propulsion System (XPS), demonstrating its strength in the UK’s dynamic and growing space sector.

Thales has a strong commitment to investing in Northern Ireland’s future talent. We support research at one of Northern Ireland’s leading universities, Queens University Belfast, on a wide range of topics including cyber security, aerodynamics and advanced networking and communications.

As well as our work with universities, Thales supports STEM outreach in primary and secondary schools in Northern Ireland. Working with Primary Engineers, Thales supports the Primary Engineer & Secondary Engineer Leaders Award for Northern Ireland, giving local school pupils the chance to meet engineers from Thales and design potential solutions to engineering challenges.

**101 . Date: 16-02-2023Loitering Munition - N/A - GeneralClandestine U.K. Program Developed 3D-Printed ‘Suicide’ Drone For UkraineURL: https://www.thedrive.com/the-war-zone/clandestine-u-k-program-developed-3d-printed-suicide-drone-for-ukraine**

In an until-now secretive program, the United Kingdom has rapidly developed and flight-tested a number of “complex” drones that would be suitable for use by Ukraine in its conflict with Russia. While it’s unclear which of any of the unmanned aircraft systems (UAS) in question were ultimately selected for supply to Ukraine, it’s obvious that a range of different capabilities was explored in the process, including surveillance drones and, most intriguingly, what is described as a “3D-printed delta-wing ‘suicide’ drone.”

Some details of the rapid development program were recently revealed by QinetiQ, the U.K.-based defense technology company that works closely with the U.K. Ministry of Defense, especially on experimental projects and novel technologies. The drone program originated in the Future Capability Group — part of the defense ministry’s Defense Equipment and Support (DE&S) branch — which, in turn, engaged QinetiQ.

A statement from QinetiQ doesn’t confirm when the program actually took place, while an uncaptioned accompanying photo (also seen at the top of this story) shows a small drone with swept wing and tail fin, apparently powered by a pair of micro-turbine engines, and possibly 3D-printed. The suggestion is that this is one of the prototypes from the program, but that also remains unconfirmed for now. On both counts, we have approached the company to find out more.

The aim of the program was to “provide recommendations for uncrewed aircraft systems that could be deployed readily by the Ukrainian military” and was part of a wider U.K. government effort, known as KINDRED, that’s assessing what kinds of weapons and equipment could potentially be introduced to service by Ukraine in the space of just four months.

Within “a few weeks,” according to QinetiQ, it was determined that the drone program would be run from the company’s sprawling MOD Boscombe Down test site, in southwest England. Here, efforts were made to set up a safe and effective “sandbox window” test environment on the airfield.

But while KINDRED explores potential new defense equipment for Ukraine that can be brought to the front line within four months, the drone program was run on a much more demanding timeline. Within just three weeks, the QinetiQ-led team was to demonstrate a series of new drones and related technology to senior U.K. Ministry of Defense officials, during a two-day event. This would include “flying experimental UAS and EW [electronic warfare] testing.”

The QinetiQ Obsidian radar, offered as a counter-drone solution:

Ultimately, the defense ministry officials observed equipment, systems, and technologies from five different companies that were demonstrated at Boscombe Down. According to QinetiQ, the test projects “included C2 [command and control] and sensor payload[s] as well as VTOL [vertical takeoff and landing] UAS and a unique 3D-printed delta-wing ‘suicide’ drone.” No details of other projects were disclosed and the companies involved have not been named.

We do know, however, that there was close involvement from a range of U.K. defense organizations and units, including the Royal Air Force (RAF) Rapid Capabilities Office (RCO), the Royal Navy, the RAF’s No. 56 Squadron, Royal Artillery, Defense Science and Technology Laboratories (DSTL), U.K. Strategic Command, and the British Army HQ, as well as the Future Capability Group and DE&S.

As well as flight tests of at least some of the rapidly developed drones, the trials also included experiments on the ground, and use was also made of Boscombe Down’s anechoic test facility, which can be used to assess how test specimens respond to radio-frequency energy, as well as providing a controlled environment to see how electronic systems and emissions interact with one another. The anechoic chamber was also used to expose the test specimens to command link jamming, an important consideration in Ukraine considering Russia’s widespread use of offensive electronic warfare.

It is worth noting that QinetiQ has also been playing a central role in developing new UAS technologies for the U.K. Royal Navy, including producing the jet-powered Banshee Jet 80+ that has been launched from the deck of the aircraft carrier HMS Prince of Wales. The adapted target drone has been used to demonstrate the broader potential for flying future adversary missions as well as more capable operational UAS that could be used aboard the two Queen Elizabeth class carriers. A Banshee development would also appear to be suitable for adaptation as a ‘suicide’ drone, should that be desired. At the very least, it would seem likely that work with the Banshee could have informed the designs developed for Ukraine.

The development program in the United Kingdom seems to have some parallels with the U.S. effort to develop the still-mysterious Phoenix Ghost loitering munition for Ukraine. This all-new weapon was quickly developed by the U.S. Air Force specifically for Ukraine and, although announced as part of a U.S. security assistance package in April last year, the weapon is not thought to have been identified in use so far.

The big question is to what degree the results of the U.K. drone experiment led to technologies that were selected for Ukraine and whether these might have even been used on the battlefield already. QinetiQ has only said that the event “delivered invaluable UAS insight and assurances to support the provision of effective equipment for the Ukrainian military.”

At the same time, while the United Kingdom is known to have transferred a considerable number of drones to Ukraine — at least 2,000, including loitering munitions — as part of its aid effort to that country, there have been few details as to the particular types supplied. It is possible that at least some of the drones supplied already are of types or configurations that were specifically designed for Ukraine.

Some of the drones provided to Kyiv by the United Kingdom so far include “unmanned surveillance systems” of unknown type, cargo-carrying logistics drones, autonomous mine-hunting vehicles, as well as 850 hand-launched Black Hornet micro-drones, the latter as part of a deal in collaboration with the Norwegian Ministry of Defense.

To date, the United Kingdom is not known to have delivered any armed drones, although the fact that a delta-wing ‘suicide’ drone has at least been tested, with a view to supplying it to Ukraine, is significant.

In fact, Ukrainian efforts to field a ‘suicide’ drone in broadly the same class as the Iranian-designed Shahed-136 used by Russia may well be gaining momentum.

A brief video that emerged on social media within the last week shows what’s apparently a modified version of the RZ60, which was originally developed in Ukraine as a target drone. The new version uses a trailer-mounted rocket-assisted launch system, instead of the previous pneumatic catapult. There is speculation that the drone is intended for one-way attack missions, although that cannot be said for certain, and details such as range and payload remain unclear.

What we do know is that Ukraine has adapted other kinds of drones for ‘suicide’ missions, including off-the-shelf hobby-style drones that have been used to target objectives in Crimea and across the border in Russia.

If the Ukrainian military were to go forward with this U.K.-developed drone as a strike weapon, it would give them another method of hitting Russian forces at longer ranges, though not nearly as far as some of its strikes with the Soviet-era jet-powered Tu-141 Strizh reconnaissance drone that Ukraine has converted into a strike platform and that’s hit targets deep inside of Russia.

For the time being, there is no confirmation that the RZ60 is indeed being adapted as a ‘suicide’ drone, although a weapon in this class would almost certainly be of great interest to Ukraine and that would appear to be reflected in the testing of a delta-wing ‘suicide’ drone in the United Kingdom.

Depending on the performance of the 3D-printed delta-wing drone tested at Boscombe Down, it’s even possible that it could be the weapon referred to recently by U.K. officials when they said they plan to offer Ukraine “longer-range capabilities,” which led to some speculation that the Storm Shadow cruise missile could be headed to Ukraine.

The U.K. government said the weapons in question “will disrupt Russia’s ability to continually target Ukraine’s civilian and critical national infrastructure and help relieve pressure on Ukraine’s frontlines.” That could well make sense as a reference to a British-designed ‘suicide’ drone, but for now, we simply don’t know.

The cost factor could also be important for any kind of drone rapidly developed for Ukraine, especially one that makes use of 3D printing. While a low price point was not one of the criteria mentioned for the U.K. drone experiment, a UAS of this kind could potentially offer a much cheaper way of striking Russian targets at distance, or even overwhelming Russian air defenses if launched in considerable numbers. At the same time, the 3D printing method should allow the drone to be designed and developed in the United Kingdom, before production is launched in Ukraine, with only minimal preparation required.

Of course, longer-range weapons are one of the critical items of military aid that Ukraine is now vigorously campaigning for — alongside new fighter jets. To what degree there may be a connection between the U.K.’s drone experiments and potential new-long-range strike weapons for Ukraine remains speculative for now, but drones, more generally, are clearly something that the United Kingdom is putting a significant emphasis on as it seeks to put additional and more effective weapons in Kyiv’s hands. It will be fascinating to see whether any of these technologies appear on the battlefield any time soon.

Hat-tip to Gabriele Molinelli for alerting us to this story.