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DRONES WORLD

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DRONES WORLD is published by - B. Kartikeya



B. KARTIKEYA

Welcome to yet another issue of Drones World. Let me start with a quote which is a general law of nature: "Everything that has a beginning must end". So does the year 2023. Let us show our gratitude to everything that has created new possibilities and end this year in high spirits.

We have made quite a good no of interaction this year. To be precise more than 35+. We will make sure we will interact with a greater number of start-ups, creators, innovators, investors and with multiple Govt stake holders.

Drone Manufacturers are eyeing more on to the Defense segment. The ongoing wars are the ones who have proved & provided the space for Drones to play important roles. Startups may have initial troubled years to see the results. Having said that still no country in the world is safe & secure. Anti-Drone has picked up lately and every country is started working towards implementation. There are various propositions & probabilities need to address meanwhile.

GIS is the most invisible and potential market to concentrate and address its challenges with the help of drones. Both are inter connected and no need to fight for superiority game unless it benefits the whole industry.

Unmanned Traffic Management (UTM) has to be the best place to bet in the coming year 2024. Not only that Advance Air Mobility (AAM) companies are getting Type certifications for the aircraft. I personally wish to see them flying in the upcoming year/s.

The career prospects that exist and will exist in near future in Drones/UAV's field will provide a great motivation to the patrons wishing to enter this sector. We wish them a great success in the captivating and lucrative Drones sector.

The biggest achievement for us would be the contribution we have made in bridging the gap between drone enthusiast and the industry itself. If you are excited to be featured in our magazine in the upcoming issues. Don't hesitate to approach us at dronesworldmag@gmail.com

There is a saying which I would like to end by vote of thanks to our beloved and devoted readers. There is no wrong time to do the right thing.

Advance Happy New years wishes to All.



TACTICAL RESUPPLY UAS READY FOR THE FLEET

The Navy and Marine Corps announced Initial Operational Capability (IOC) for the TRV-150C Tactical Resupply Unmanned Aircraft System (TRUAS) Oct. 27 at Marine Corps Base Hawaii. The first six production systems arrived last week at the Marines Third Littoral Logistics Battalion (LLB-3) in Kaneohe Bay, Hawaii, which means that LLB-3 is sufficiently manned, trained and ready to deploy with the TRV-150C.

"This achievement means the fleet is ready and fully capable of deploying and using this game-changing system, which will enable Marines to perform forward deployed contested logistics missions," said Gregg Skinner, Navy and Marine Corps Small Tactical Unmanned Aircraft Systems program manager (PMA-263), whose Unmanned Logistics Systems-Air (ULS-A) team oversees the TRUAS program.

Prior to declaring IOC, support staff from the Air Test and Evaluations Squadron Two Four (UX-24) from Naval Air Warfare Center Webster Outlying Field in Maryland arrived at MCB Hawaii along with an instructor from the Training and Logistics Support Activity Pacific, to conduct final operator qualification with LLB-3. After reviewing the differences between prototype and production systems, the

trainers and operators successfully completed 36 training flights to ensure that the unit was ready to deploy.



"The contested logistics environment challenges the ability of our Marines to distribute necessary supplies to the right place at the time of need," said Col. Aaron Angell, Logistics Combat Element Division director. "TRUAS gives a logistics unit the organic ability to immediately respond with a precision ground launched air delivery system. This is leap-ahead technology that we will learn to continue to shape future unmanned aerial logistics platforms."



PMA-263 awarded the production contract for the TRV-150C in April 2023 following a rapid prototyping initiative that brought the system from inception to the fleet in less than four years. "This was a total team effort in accomplishing this milestone in record time," Skinner said. "Special thanks to the PMA263 Team, Training and Logistics Support Activity Pacific, Air Test and Evaluations Squadron Two Four (UX-24), and the Service Engineering Company (TRUAS prime contractor) for their hard work and dedication aimed at getting this much needed Force Design 2023 capability in the hands of the Warfighter."

TRUAS is a land based, autonomous UAS that provides organic logistics to Marine squads through automated launch, waypoint navigation, and automated landing and payload drop. The system provides battlefield logistics capability to distribute critical supplies at Expeditionary Advanced Bases, where the risk to manned aircraft would deny manned aviation resupply operations out to the last tactical mile.

AEROVIRONMENT'S JUMP 20 MEDIUM UAS DEMOS MARITIME AUTONOMOUS TAKEOFF AND LANDING AT VESSEL SPEEDS OVER 20 KNOTS

AeroVironment, Inc announced the company's JUMP 20 VTOL Medium UAS exceeded expectations during the recent U.S. Naval Forces Southern Command/4th Fleet Hybrid Fleet Campaign Event (HFCE) that demonstrated human-machine teaming in the maritime domain. The JUMP 20 provided ship-based intelligence, surveillance, reconnaissance, and targeting (ISR-T) support to USFOURTHFLT and USSOUTHCOM during the week-long, at-sea exercise onboard USNS Burlington. The JUMP 20 has previously flown over 130,000 land-based hours in support of U.S. Special Operations Command combat deployments, and the expansion of JUMP 20 operations into the shipboard environment allows AeroVironment to provide these services globally.

During HFCE, JUMP 20 showcased its ability to launch and recover at vessel speeds over 20 knots, with fully autonomous flight from takeoff to landing. The JUMP 20 requires neither launch or recovery equipment, nor personnel on the flight deck during launch and recovery, maximizing operational safety and flexibility for users. JUMP 20's vertical takeoff and landing (VTOL) capability, and class-leading endurance and payload capacity expand the operational capabilities of U.S. and allies to compete and win in the era of great power competition. The JUMP 20 demonstrated how uncrewed systems will support distributed operations across multiple domains, supporting national security objectives and our warfighters.

"The shipboard flight environment is dynamic and challenging. JUMP 20 is a proven combat-effective platform, and the system's performance during HFCE illustrates the value to maritime operations. JUMP 20's ability to launch and land at speed, and without personnel intervention, enhances the ship's operational effectiveness and enables operators to focus on important mission tasking," said Shane Hastings, AeroVironment's vice president and product line general manager for Medium UAS. "As we continue to demonstrate and prove the effectiveness of the JUMP 20 platform, we look forward to getting this capability in the hands of our sailors, Marines, and allies operating in the maritime environment." AeroVironment JUMP 20 is deployed to U.S. and allied militaries around the world, and it can be provided on a contractor-owned / contractor-operated (COCO) basis to maximize operational flexibility.

Australia's 1st MQ-4C Triton Takes Flight

Northrop Grumman Corporation successfully completed the first flight of Australia's multi-intelligence MQ-4C Triton uncrewed aircraft on Thursday, Nov. 9 at its Palmdale Aircraft Integration Center in California. The flight marks a major production milestone as Northrop Grumman progresses toward delivery of Australia's first Triton in 2024.

Built for the U.S. Navy and Royal Australian Air Force, the multi-intelligence MQ-4C Triton is the only uncrewed, high-altitude, long-endurance aircraft performing persistent maritime intelligence, surveillance, reconnaissance and targeting.

The first flight occurred at 11:56 a.m. PST with total flight time of approximately 6 hours and 24 minutes. Airworthiness evaluations, such as engine, flight control and fuel system checks, and basic aircraft handling tests were conducted.

In September, the Australian government announced the addition of a fourth aircraft that will enhance the resilience of their fleet and provide superior surveillance capability to monitor and protect Australia's maritime interests 24/7.

Experts: Christine Zeitz, chief executive and general manager Australia & New Zealand, Northrop Grumman: "We are leveraging our deep expertise in



uncrewed high-altitude long endurance aircraft to enable Australia to establish a superior long range maritime surveillance capability to monitor and protect Australia's maritime interests 24/7."

Air Marshal Robert Chipman, Chief of the Royal Australian Air Force: "Triton expands Australia's intelligence, surveillance and reconnaissance capability by providing reliable real-time intelligence and situational awareness. Persistent surveillance enables better planning, greatly enhancing joint military responses and operations."

Details on Program: The multi-intelligence MQ-4C Triton uncrewed aerial system achieved a declaration of initial operating capability (IOC) by the U.S. Navy on Aug. 3, 2023.

Australia's role in the Triton cooperative program was critical to shaping its system requirements. Together, U.S. and Australian defense forces will be able to share data collected by their respective Tritons, a critical ability in one of the world's most strategically important regions. Australia's security challenges run the spectrum of humanitarian and disaster relief to maritime monitoring of the vital sea lanes in the Indo-Pacific. With all four Australian Tritons currently under contract progressing as planned through their production schedules, the systems will have a vital role to play with sensors and communication nodes that can facilitate the transfer of data across warfighting domains and various mission needs.

Naval UAS Tested at Sea from a French Navy Frigate

Airbus Helicopters and Naval Group, in collaboration with the French Armament General Directorate, DGA (Direction générale de l'armement), and the French Navy, have tested the SDAM demonstrator (Système de Drone Aérien Marine/ Naval Aerial Drone System) from a multi-mission frigate (FREMM). The trials took place on board the French Navy frigate, Provence, in the Mediterranean Sea between the 2nd and the 9th of October. The vessel had previously been adapted by Naval Group to operate the SDAM. These sea trials were arranged to demonstrate the system's high performance from an operational warship and the SDAM's capabilities for surveillance and intelligence missions.

"We are proud to see that the SDAM and the VSR700 are maturing," said Bruno Even, CEO of Airbus Helicopters. "The system that we will offer will be able to operate from a frigate and be adapted to the naval missions it was designed for," he added. "Working alongside Naval Group



and other local partners we are building a robust and sovereign solution. I look forward to further demonstrating the potential of our system and to collaborating with the French Navy in order to offer an initial operational capability by 2026."

"We are very happy with the success of these trials which mark a major step in the reinforcement of the French Navy's future capabilities. We have passed a significant milestone in terms of the complexity of the integration of an unmanned aerial system (UAS) on board a heavily armed vessel, both physically and operationally," said Pierre-Eric Pommellet, CEO of Naval Group. "These trials have also shown the relevance of the Naval Group I4Drones® mission system, and the fact

that the SDAM demonstrator can seamlessly be integrated on a vessel and will work harmoniously with other existing systems. In synergy with the ship's combat system and the embarked helicopter, the drone will be another means to access complementary airspaces and will truly be a remote sensor that will expand the crew's perception and treatment of threats in real time."

The derisking study for the SDAM programme was awarded to Airbus Helicopters and Naval Group by the DGA. The objective is to design, produce and test a rotary wing unmanned aerial system demonstrator for the French Navy. The system works with the Airbus Helicopters VSR700 unmanned aerial system and the I4Drones® mission system developed by Naval Group. Naval Group has also been tasked with the integration of the system onboard military vessels. The project also involves French SMEs like Hélicoptères Guimbal and Diades, contributing to the creation of a local naval UAS industry in France.



ParaZero Elevates Defense Drone Safety with Groundbreaking AI Avionics System

ParaZero Technologies announces its next-generation safety product development, SmartAir Trinity, an AI-based avionics system, which utilizes a new, leading-edge sensor array with advanced capabilities, designed to detect malfunctions of UAS and eVTOL in real-time, and provide deep analytics for mission debriefings. ParaZero's next-generation avionics are built with sophisticated visual awareness cameras and a robust sensor-array malfunction detection system to enable unmanned aircraft systems (UAS) and electric vertical takeoff and landing (eVTOL) aircraft to conceive and analyze surroundings, similar to a human pilot, and mitigate flight risks autonomously.

The SmartAir Trinity system is comprised of sophisticated visual awareness cameras and an advanced sensor suite that enables UAS and eVTOL aircraft to understand their surroundings using artificial intelligence and machine learning technological capabilities. Its AI-embedded approach supports safety and risk mitigation in addition to over-the-air (OTA) firmware and configuration updates, keeping every platform up-to-date with the latest and most accurate algorithms and features.

Among a host of new safety capabilities, the SmartAir Trinity offers an optimized parachute deployment algorithm to enhance operational containment capabilities, detection and identification of safe landing zone and delivery site areas, GNSS-free navigation, redundancy system for onboard GPS, and monitoring the aircraft's behavior with great operational insight.

"The commercial UAS and UAM markets continue to gain momentum, with ongoing technology releases, new aircraft development, and supportive global regulatory frameworks. In order for organizations to meet performance-based safety requirements and cut time-to-market, they look to leverage the most robust and effective safety systems and technologies; in those cases, legacy safety systems often won't cut it," said ParaZero Chief Product Officer, Yuval Gilad. "ParaZero's safety product portfolio has played a critical role in ensuring the safety of urban air mobility and commercial drone flight operations around the world for many years. We are looking forward to offering our next generation safety technology to the industry at a pivotal time to address both integration needs from original equipment manufacturers and regulatory requirements, to enable every platform to reach its full potential."

Schiebel Camcopter S-100 Excels at Major Nato Exercise Showcasing Multiple Maritime Capabilities

Schiebel participated in REPMUS (Robotic Experimentation and Prototyping using Maritime Uncrewed Systems) and Dynamic Messenger 2023, in Portugal. Together with several partners, Schiebel conducted flights with the CAMCOPTER® S-100, showcasing its Anti-Submarine Warfare (ASW) sonobuoy deployment solution, bathymetric scanning for Rapid Environmental Assessment (REA) and Mine Counter Measures (MCM) as well as Autonomous Underwater Vehicle (AUV) and profiling float deployment.

Unmanned solutions for ASW, MCM, REA and Maritime Security Operations (MSO) are becoming increasingly relevant and applicable in today's naval defence. At the month-long large-scale NATO exercise, Schiebel demonstrated its multi-mission capability with a selection of different sensors and payloads, reconfiguring the CAMCOPTER® S-100 between missions to conduct a variety of operations.

At last year's REPMUS, Schiebel, together with Thales, demonstrated the relaying of data from sonobuoys. This year, the S-100 impressed with its sonobuoy dispenser, successfully deploying NATO-standard G-size sonobuoys. The combination of both these capabilities enables the Schiebel Unmanned Air System (UAS) to offer an end-to-end solution for ASW.

In the field of MCM, the CAMCOPTER® S-100 successfully demonstrated the VQ-840-G LIDAR from the Austrian company RIEGL working with Thales. Through the open architecture of the Thales MCM Mission Management System (M-CUBE), which enables rapid and flexible third-party sensor integration, the CAMCOPTER® S-100 was able to perform a complete airborne MCM mine hunting capability, achieving 100% detection of all mine targets.

Schiebel also showcased its role in supporting advanced REA missions, using the S-100's proven cargo hook to deploy the Yuco AUV from the French company Seaber, as well as the APEX profiling float from Teledyne, producing a top bathymetric situational picture. The Fugro Rapid Airborne Multibeam Mapping System (RAMMS) from the U.S. Company Areté contributed to the top bathymetric product, specifically closing the surf zone gap, which cannot be safely accessed by surface assets.

Unmanned-Unmanned Teaming (U-UT) was presented at the NATO exercise with the S-100 relaying data from ALSEAMAR's SEAEXPLORER glider to a Combat Management System (CMS), validating the capability of the underwater vehicle to operate in a satellite-denied environment.

"Being NATO exercises, REPMUS and Dynamic Messenger are exceptional playgrounds to demonstrate our innovative capabilities. The S-100 once again proved to be a vital unmanned asset in supporting the latest maritime defence solutions, such as ASW and MCM - offering highly sought after capabilities", said Hans Georg Schiebel, Chairman of the Schiebel Group.

Schiebel's partners included Areté, Thales, Seaber (Yuco), Teledyne (APEX), ALSEAMAR (SEAEXPLORER), RIEGL and Fugro. The S-100's involvement in the exercises was sponsored by both the UK Royal Navy and the U.S. Office of Naval Research. REPMUS and Dynamic Messenger were hosted by the Portuguese Navy.

CENTAURIUM UAS AND THALES JOIN FORCES TO OPEN SWISS SKIES TO LONG-RANGE DRONE OPERATIONS

Centaurium UAS and Thales signed a cooperation agreement which also comprises the delivery of two Thales UAS100 drone systems and ground control stations to the Switzerland-based company ahead of testing in the spring of 2024 and the planned start of commercial operations in 2025.

From risk monitoring on large-scale infrastructure to border surveillance, event security, fire detection and location of missing persons, the UAS100 meets the requirements of a wide range of mission scenarios while operating in full compliance with general aviation regulations.

Centaurium UAS will operate the drones and offer services tailored to the specific needs of public and private players in Switzerland, with lower operating costs and 90% lower energy consumption than current piloted aircraft.

Centaurium UAS is positioned as a service provider for monitoring, surveillance and alert missions. Use cases include inspection of critical infrastructure and industrial installations such as high-voltage lines and transport routes, monitoring of natural disasters, border surveillance and security for major events, as well as flights to locate missing persons and provide situational awareness in support of search and rescue and other emergency operations. Centaurium UAS will rely on Thales's UAS100 technology for the necessary flight avionics, benefitting from its highly robust design, built-in security, versatility and scalability, and a latest-generation ground control station that meets the criteria for European Union Aviation Safety Agency (EASA) certification.

The avionics of the UAS100 combines the certified levels of flight safety and security of Thales solutions for the aerospace sector with the lightweight and compact design needed for integration on a light UAV. With an aerostructure developed by light aircraft manufacturer Isoire Aviation, the UAS100 concept offers levels of performance, integrity and reliability with no equivalent in Europe.

The UAS100 is powered by two electric motors and a small internal combustion engine, ensuring the necessary endurance and resilience to failure. Equipped with a jam-resistant navigation system, a redundant computer for critical missions and a smart communication system, it can fly



autonomously in complete safety. The UAS100 will be marketed in two versions: the UAS100-1, which is already available and has a wingspan of 3.34 metres, a length of 1.78 metres and a payload capacity of 1 kilogram; and the UAS100-10, which is twice the size and offers a payload capacity of 10 kg to accommodate very high-performance sensors.

The ground control station – the nerve centre for planning, control and supervision of drone operations – will be supplied to Centaurium UAS in November, with delivery of the first UAS100-1 in March 2024 for initial trials. Centaurium UAS plans to begin commercial operations in 2025, once authorisation is obtained from the Swiss

Federal Office of Civil Aviation (FOCA).

“With Thales, we’re delighted to have found the ideal partner so we can operate on-demand long-range commercial drone services for our customers in the near future. The partnership agreement between Thales and Centaurium UAS marks the start of a new era for drone operations in Switzerland.” – Ernest Oggier, CEO, Centaurium UAS.

“Centaurium UAS isn’t only a first customer but the ideal partner to optimise drone operations with a view to achieving system certification and offering commercial services with lower costs and environmental impact.” – Jean-Paul Ebanga, Vice President Flight Avionics, Thales.

GA-ASI Demos Short Takeoff/Landing of UAS on UK Carrier

General Atomics Aeronautical Systems, Inc. (GA-ASI) conducted a first-of-its-kind demonstration of its short takeoff and landing (STOL) capability on the HMS Prince of Wales, a Royal Navy aircraft carrier, using the Mojave Unmanned Aircraft System. The demonstration took place on November 15, 2023, when the Prince of Wales was underway off the East Coast of the U.S., and the Mojave was controlled by an aircrew within a control station onboard the ship. The demonstration included takeoff, circuits, and approaches and ended with a landing back onto the carrier.

"We applaud the Royal Navy's foresight in embracing this unprecedented capability for its carriers," said GA-ASI CEO Linden Blue. "We knew our STOL capability would enable a UAS to safely take off and land on the Prince of Wales. Seeing our Mojave operate successfully in this environment opens myriad new ways our aircraft can be used to support multi-domain naval operations."

Mojave is a short takeoff and landing UAS demonstrator originally developed to prove STOL operations at unprepared landing sites. While Mojave shares common systems and components with GA-ASI's Gray Eagle model, a STOL wing set option is likewise being planned for the larger, more capable MQ-9B aircraft, which includes SkyGuardian[®],



SeaGuardian[®], and the new Protector RG Mk1 currently being delivered to the UK Royal Air Force. The MQ-9B version, called MQ-9B STOL, is being considered by the Royal Navy and other navies that operate aircraft from large flat-deck warships without catapults and arresting gear.

Royal Navy Director Develop, Rear Admiral James Parkin, whose team planned the trial, said: "The Mojave trial is a European first - the first time that a Remotely Piloted Air System of this size has operated to and from an aircraft carrier outside of the United States. The success of this trial heralds a new dawn in how we

conduct maritime aviation and is another exciting step in the evolution of the Royal Navy's Carrier Strike Group into a mixed crewed and uncrewed fighting force."

Equipping UAS with STOL capability provides greater versatility and allows the aircraft to operate in areas previously deemed unsuitable for UAS operations, including landing onto and taking off from an aircraft carrier. MQ-9B STOL will be capable of carrying the same payloads and conducting the same missions as the SkyGuardian and SeaGuardian, including maritime surveillance, Anti-Submarine Warfare (ASW), Airborne Early Warning (AEW), and surface strike.

AeroVironment's JUMP 20 Group 3 UAS Demos Modularity & Adaptability at Arcane Thunder 23 Multi-Domain Exercise

AeroVironment, Inc. recently participated in the Arcane Thunder 23 (AT23) operational exercise in Europe, demonstrating the JUMP 20 Group 3 unmanned aircraft system's (UAS) ability to support multi-domain operations. AT23 is part of the U.S. Army's Project Convergence - Europe campaign to evaluate the progress of the service's modernization efforts. The intent of this exercise is to validate and test the continuous integration of effects in various domains including air, land, sea, space, and cyberspace.

During the operational exercise, AeroVironment, in collaboration with CACI and with support from the U.S. Army's 2nd Multi-Domain Task Force (2nd MDTF), flew the JUMP 20 UAS with multiple Electronic Warfare (EW) payloads and delivered real-time data at the point of need. The exercise used industry technology, such as the JUMP 20, to enhance communication between sensors and shooters, enabling warfighters to efficiently coordinate lethal and non-lethal effects.

"AeroVironment's role in AT23 showcases the



adaptability of the JUMP 20 platform to meet the needs of the modern warfighter and outmatch adversaries in an ever-changing landscape," said, Shane Hastings, AeroVironment's Vice President of Medium UAS. "We remain committed to continually integrating new technologies into the JUMP 20 platform to provide maximal advantage in both the maritime and land domains."

During the exercise, which was held near Ustka, Poland, from August 28 - September 8, the JUMP

20 carried multiple imaging and EW payloads while employing an open system architecture that can quickly adapt and accommodate radios operating in different frequency bands. Flight operations included the use of an advanced seven-inch stabilized imaging system with continuous zoom and onboard video processing designed to provide superior day and night surveillance capability. Additional payloads included a high-performance wideband radio receiver that enables passive radio frequency (RF) aerial surveys of operational environments, real-time geolocation of signals, among other mission planning tasks. According to the U.S. Army, AT23 is an unprecedented multi-domain and multi-national exercise that is the result of the close partnership between U.S. Army Futures Command and U.S. Army Europe and Africa, combining new experimental technologies and formations while informing further capability requirements that will help deliver the Army of 2030 and beyond.

INSITU ANNOUNCES AI-POWERED, WIDE-AREA MARITIME SEARCH CAPABILITY FOR INTEGRATOR UAS



Insitu, A Boeing Company, announced the launch of a new AI-powered, wide-area search payload for Integrator in collaboration with Overwatch Imaging. The PT-6 Smart Sensor brings a highly sought-after maritime search capability to Integrator's unmatched payload portfolio and class-leading 24-hour flight endurance.

"Wide-area maritime search capability has been a critical enabler to our customers' mission sets for decades," said Abigail Denburg, Insitu Vice President of Global Growth and Strategy. "ScanEagle has assisted in the capture and interdiction of over \$5 billion in illegal narcotics by the US Coast Guard and partner agencies since being deployed across the National Security Cutter fleet. It's a natural progression for us to bring this capability to Integrator, which has even more payload capacity, as well as longer endurance."

Overwatch Imaging designed and produces PT-6, which fits seamlessly into one of Integrator's six payload bays. PT-6 automates the otherwise focus-intensive role of searching for small targets

of interest in large areas, often in challenging conditions. PT-6 is powered by Overwatch-AI software, which automatically controls sensor operation to scan a search area continually, process data in real-time on the edge, and notify the operator or networked payload with geolocated image data of detected objects that warrant further review.

Operators can designate automated search areas and detection thresholds based on mission parameters to optimize sensor and software operation. Multi-spectral sensors allow searches to proceed from day to night and leverage long-wave infrared technology to detect thermal anomalies within a uniform maritime background. Integrator offers 24+ hours of endurance; is designed for easy integration of modular, field-swappable, Multi-INT payloads like PT-6 (a total of 40 pounds available across six bays); and has plenty of onboard power to spare.

"With multiple payload bays to spare, PT-6 can be paired with a variety of other sensors

to maximize mission capability on one single platform."

"Overwatch Imaging is pleased to see our AI-enabled wide-area search capabilities paired with Integrator's exceptional long-endurance platform," said Matt Nugent, Overwatch Imaging VP of Product Management. "The PT-6 is a great match for the endurance and multiple payload capacity of Integrator. Augmenting the platform with passive, automated search and detection capabilities will be a force multiplier for the important missions Integrator users and customers serve around the world."

With three decades of experience, more than 3,500 uncrewed aircraft manufactured to date, and more than 1.4 million operational flight hours, Insitu continues to deliver the most advanced capabilities available to our global customer base in more than 35 countries and counting. Visit [Insitu.com](https://www.insitu.com) to learn more about the most capable, reliable, and combat-proven Small UAS on the market.



Eve and NATS Announce Collaboration to Develop Urban Air Mobility Traffic Management Services

Eve Air Mobility a company dedicated to accelerating the entire Urban Air Mobility (UAM) ecosystem, and NATS Services, the commercial arm of the UK's leading provider of air traffic control services, has announced at the Dubai Airshow a collaborative effort supporting the development of future traffic management services for UAM operators around the world. The signed Memorandum of Understanding (MoU) reinforces the partnership between the two companies to make UAM a safe reality and will advance technologies for a faster, more efficient and sustainable urban air transportation system for all.

"Our first association with NATS began in early 2021 as part of the UK UAM Consortium with the UK CAA Regulatory Sandbox, developing a concept of operations for the London environment, including air traffic management arrangements and proposing new regulatory solutions," said Johann Bordaix, CEO of Eve. "Our work with NATS throughout the years both fortifies our newly established relationship and supports our forthcoming projects and future endeavors designed to transform the urban air mobility sector globally."

The Eve-led UK Concept of Operations (CONOPS) was developed in partnership with the UK Civil Aviation Authority (UK CAA) and global companies, including NATS as well as six other members, and leveraged data to focus on necessary solutions for near-term UAM concerns for London. The UK CAA published the Phase 1 results of the Future Air Mobility Regulatory Sandbox project in October 2021, highlighting eVTOL strengths and the challenges that will inform future developments in the UAM industry.

Eve and NATS have also been part of the Future Flight Challenge through the Advanced Mobility Ecosystem Consortium with leading British aviation companies since July 2022. Developed by UK Research and Innovation and delivered by Innovate UK, the program is UK Government funded and aims to accelerate the progress of new technologies and advanced aviation solutions while showcasing the societal benefits of aviation's progress.

"We already work closely with Eve as part of the UK Future Flight Phase 3 AMEC project, working to prepare UK airspace for future UAM operations," said NATS Services MD, Guy Adams. "Going forward, we intend to grow our collaborative efforts to explore future traffic management products and solutions worldwide and enable the introduction and scaling of UAM across many countries in a consistent, high-performance and safe approach."

Eve's Urban ATM software is an agnostic solution that will enable the integration of all airspace users in the urban environment. This is critical to support the safety, efficiency, and improvement of the entire UAM ecosystem, including fleet and vertiport operators.

PABLO AIR Clinches CES 2024 Innovation Award for Urban Air Traffic Management Platform 'UrbanLinkX'

PABLO AIR, a leading provider of UAV swarm control solutions, proudly announced its victory of the CES Innovation Award in the Smart City category for its Urban Air Mobility (UAM) traffic management platform, 'UrbanLinkX'.

The award-winning 'UrbanLinkX' is designed to efficiently operate and manage UAM, featuring functions such as reducing traffic management workload, improving economic viability, and mitigating operational risks. The platform includes key functions such as flight plan submission and approval, traffic flow management, and management of airborne communication quality. These features utilize corridor density metrics to ensure stable and safe UAM operations. Real-time visualization of aerial communication quality data in 3D graphics facilitates connectivity between aircraft and base station.

As UAM emerges as the next-generation transportation solution to address traffic congestion, it is also expected to resolve a wide range of human issues, including health, daily life, and local economies. Serving as an essential traffic management platform for UAM operations, 'UrbanLinkX' will act as a control center and governance tool, accelerating the integration of air taxis into everyday life and bringing about societal benefits.

PABLO AIR plans to showcase its technological capabilities at CES 2024 through a drone show and kickstart the overseas expansion of drone platform and shows. The company offers a diverse range of drone platforms for visually stunning drone shows, including small drones that ignite LED lights and fireworks simultaneously, large drones that create a fireworks tower, and high-speed drones simulating a meteor shower.

Kim Young-Joon, CEO of PABLO AIR, expressed, "Winning the Innovation Award with 'UrbanLinkX' is the result of global recognition of PABLO AIR's innovative technological capabilities on the world stage," highlighting the dedication of all technical personnel in solving humanity's current problems.



ALOFT SELECTED FOR PIONEERING NORTH TEXAS AIRSPACE AWARENESS PROJECT, LEADING THE WAY IN ADVANCED AIR MOBILITY



Aloft Technologies, Inc., a trailblazer in drone fleet and airspace management, has been selected to participate in the prestigious North Texas Airspace Awareness Project. This selection underscores Aloft's commitment to shaping the future of low-altitude airspace and Advanced Air Mobility (AAM) in one of the nation's most dynamic regions. The North Texas Airspace Awareness Project, spearheaded by the North Central Texas Council of Governments (NCTCOG), aims to integrate Advanced Air Mobility (AAM) solutions, including the exciting potential of scalable drone delivery and, ultimately, air taxis, into the region's airspace. Aloft's involvement in this project is a testament to its innovative approach to UTM (UAS Traffic Management) technologies and its patented dynamic airspace platform.

As a participant in this groundbreaking project, Aloft will leverage its extensive expertise in managing drone operations and its robust patent portfolio, including dynamic airspace and remote identification technologies. Phase

I of the project will focus on cities across North Texas leveraging Aloft Geo to publish local safety advisories across the Aloft platform, including BAUFly. Aloft's role will be crucial in ensuring the safe and efficient integration of various aerial activities, from commercial drone operations to the anticipated advent of air taxis, thereby revolutionizing AAM.

Aloft's selection is not just a milestone for the company but also a significant development for North Texas. The region is already a focal point of UTM innovation, being home to the FAA's first UTM Key Site and various Supplemental Data Service Providers (SDSPs), including advanced weather data and DSS systems, for example. Aloft's leadership in this project will further cement North Texas as a hub for aerospace innovation and development.

Looking ahead, Aloft's involvement in the North Texas Airspace Awareness Project is set to pave the way for a new era in low-altitude airspace management. This initiative aligns with Aloft's vision of not only advancing drone technology but

also laying the groundwork for the integration of AAM into everyday life, thereby transforming the landscape of urban transportation.

"We are thrilled to be selected for the North Texas Airspace Awareness Project, a milestone that not only recognizes Aloft's commitment to innovation in airspace management but also positions us at the forefront of the evolving landscape of mobility. This project is more than just an integration of advanced technologies; it's a leap toward the future where air taxis and uncrewed aircraft seamlessly coexist in our skies and in concert with legacy aviation. Our involvement in this initiative is a testament to our team's relentless pursuit of excellence, and safety, and our vision to redefine the boundaries of aerial transportation. We are proud to lead the way in North Texas, a region rapidly becoming synonymous with aerospace innovation, and are excited about the possibilities this project unlocks for safer, more efficient, and more connected communities." - Jon, CEO of Aloft Technologies, Inc.

ZING, SKYWAY & TEAL RELEASE CLOUD REMOTE ID SERVICE

Skyway, Zing, and TEAL Communications, leading innovators in the unmanned aircraft industry, have announced their strategic collaboration in UAS connectivity and drone delivery operations. Together these collaborators will provide turnkey solutions for safe and eco-friendly drone operations.

Zing Remote ID

Zing, a leader in drone innovation since 2018, proudly presents the Z-RID Broadcast Module. This USA-made FAA-approved module streamlines drone-to-drone deconfliction and ensures regulatory compliance. With a user-friendly Plug and Play design and an impressive 14-hour battery life, it's universally compatible with all drone models, from the Mavic Mini to the Matrice series. Zing's dedication to accessible drone technology and safety shines through this revolutionary product.

"This marks the culmination of six months of collaborative effort between our MIT engineering team and our dedicated Florida-based business development team. We are thrilled to introduce the Z-RID(TM) Broadcast Module to the market, offering a robust, American-made solution that ensures FAA compliance for public safety and commercial



operators. The integration with TEAL and Skyway enables key features such as drone-to-drone deconfliction in real-time and a complete picture of low altitude airspace." - Ian Annase, Zing Drone Solutions

In this partnership with Teal, Skyway introduces its innovative cloud-based radio service, enhancing the capabilities of eVTOL and unmanned aircraft. "This product collaboration launches a new era for aircraft communication utilizing traditional enterprise cloud systems," says Clifford Cruz, CEO of Skyway. Robert Hamblet, CEO of Teal, adds, "The drone industry is experiencing a

significant transformation, and eSIM technology is at the forefront of this change. We are thrilled to be partnering with Zing and Skyway to open up new possibilities for UAS, allowing drones to extend their reach globally."

Specializing in mission planning services for airspace management and vertiports, Skyway ensures the seamless integration of unmanned aircraft into urban airspace. By optimizing safety and efficiency, Skyway's solutions not only elevate the standards of drone delivery operations but also pave the way for the industry's robust growth. Through this collaboration, Skyway, in tandem with Teal, redefines the landscape of UTM, setting new benchmarks in innovation and reliability. As this collaboration continues to challenge industry norms, businesses are now invited to be a part of the journey. Zing's pioneering UAS connectivity solutions are currently available for businesses seeking streamlined drone delivery operations in the United States. Zing is gearing up for an international release in the near future, promising businesses worldwide the same level of efficiency, reliability, and cutting-edge technology that the collaboration with Teal and Skyway exemplifies.

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UP42 AND GLOBHE SIGN PARTNERSHIP TO BRING DRONE DATA TO GEOSPATIAL MARKETPLACE

UP42, a leading geospatial developer platform and marketplace, and GLOBHE, the world's premier on-demand drone data marketplace, announced their partnership to make high-quality drone data available through UP42. The agreement expands UP42's current offer of satellite, aerial, elevation, weather, AIS and RF data

Based in Stockholm, Sweden, GLOBHE relies on 9500+ local professional drone operators in 142 countries and is the sole drone marketplace platform on the market to support automated data collection at a global scale for sustainable infrastructure, environmental and humanitarian purposes.

"The addition of GLOBHE's drone data to our marketplace underscores our commitment to being a one-stop-shop for all geospatial needs but we carefully select partners who share our same vision to deliver on this mission," said Sean Wiid, CEO of UP42."

UP42's customers will be able to access the following services through the marketplace:

Archive: Access to GLOBHE's vast library of drone data from over 100 countries.

Tasking: Request(s) on one or multiple



locations will be matched against professional drone operator(s) authorized and licensed to collect the data.

By making all of GLOBHE's data available in UP42's STAC-compatible (SpatioTemporal Asset Catalog) data management solution, customers will benefit from a simplified data search and management for easier processing and integration.

In tasking drones via UP42, customers will also appreciate the platform's advanced capabilities, such as order tracking, automated delivery, wide range of sensor types and support for complex and multi-geometry AOIs.

"We are incredibly excited to partner with UP42, an organization that, like GLOBHE, is at the forefront of geospatial innovation. This partnership represents a pivotal step forward in democratizing access to high-resolution drone data, ensuring that organizations across the globe can make more informed, sustainable decisions," says Helena Samsioe, CEO & Founder of GLOBHE. "We believe in the power of local expertise combined with global reach, and through this collaboration, we grant access to drone data at scale. Our mission is to empower change-makers with the data they need to create a more resilient, sustainable world."

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Trimble Introduces Next Generation MPS566 Modular GNSS Heading Receiver

Trimble announced its next generation Global Navigation Satellite System (GNSS) receiver for marine construction and drilling and piling operations—the Trimble MPS566 Modular GNSS heading receiver. With built-in dual GNSS antenna ports and constellation-agnostic Trimble ProPoint™ technology, the MPS566 delivers highly accurate positions and orientation for work that demands precise heading. With a ruggedized and compact form factor, the MPS566 consumes low power and has minimal cabling, all benefits when installation space is at a premium.

Advanced connectivity and multiple real-time correction options. With multiple options for real-time GNSS corrections including Trimble CenterPoint RTX, the MPS566 receiver delivers varying levels of precision down to centimeter level. The MPS566 includes an integrated 4G/LTE cellular modem, making it easier to use base-station-free IBSS/VRS on site and communicate with the receiver via the internet. The receiver can also be used as an internet gateway for file transfer—including construction design files—and remote support, saving time and money.

Precise positioning for marine and drilling/piling applications. The MPS566 receiver provides precise position and heading for Trimble Marine Construction software, helping operators achieve accurate, efficient dredging using a long reach excavator, cutter suction dredge,

wire crane or trailing suction hopper dredger.

The all-in-one unit provides positioning, heading, pitch and roll, delivering the precision required on marine construction projects including dredging, block and structure placement, barge monitoring, beach replenishment and before

and after-construction surveying. "The new MPS566 receiver is all about accuracy and rugged simplicity, making it easier to work in difficult environments—such as busy port facilities—when below the waterline precision is extremely important," said Kevin Garcia, general manager of civil specialty solutions for Trimble. "This receiver is designed to be powerful, precise, rugged and easy to use. Even on remote solar installations, it can be configured so equipment operators can focus on the task at hand." The MPS566 is also fully compatible with the Trimble Groundworks Machine Control System, allowing operators to obtain precise locations for more accurate drilling and piling, even when GNSS multipath interference is present. This is particularly beneficial for meeting the accuracy and positioning requirements for renewable energy construction projects, including solar farms.



Trimble Introduces AI-Powered Capability to Automatic Invoicing Functionality with Microsoft Azure

Trimble announced that Trimble's Viewpoint Spectrum® and Viewpoint Vista™ construction enterprise resource planning (ERP) software now includes Automatic Invoicing capability. The integration of Azure AI Document Intelligence enhances Automatic Invoicing, helping automatically turn paper and PDF invoices into validated, unapproved invoice entries within Spectrum and Vista for faster, more accurate workflows that save contractors valuable time, effort and money.

"In an industry where projects operate on tight schedules and margins, every second and every dollar counts," said Lawrence Smith, vice president and general manager of Construction Management Solutions at

Trimble. "Trimble's Automatic Invoicing/Document Intelligence integration was created to take the manual burden of data entry and verification off the accounting department and automates it using artificial intelligence. The result is a more accurate process and a higher level of productivity, while also freeing accounting departments to focus on more strategic tasks."

One of the most significant advantages of the integration is the reduction in errors. Construction projects involve intricate financial processes, and even minor inaccuracies in invoices can lead to major setbacks. By automating the data extraction process, Trimble's Automatic Invoicing/Document Intelligence integration

delivers a heightened level of accuracy, improved financial workflows, and streamlined project management overall.

"We are pleased to see Trimble leverage the power of Azure AI to drive meaningful and transformative innovation for its customers," said Eric Boyd, corporate vice president, AI Platform, Microsoft. "Through Azure AI Services, we are committed to helping companies to address their pain points, enhance productivity and increase competitive advantage. By integrating Microsoft's AI capabilities into their solution, Trimble is helping troubleshoot unique challenges faced by the construction company further demonstrating the power of AI to redefine and elevate essential business processes."

New RIEGL Laser Scanning Solutions for UAV-based Data Acquisition

With their latest developments, RIEGL once again underlines its pioneering role as a provider of high-performance LIDAR sensors and systems for integration with UAS. The ongoing trend in the UAS industry demands for performance-matched and survey-grade laser scanners for integration with both compact multi-rotor and high-speed VTOL or fixed-wing UAV platforms.

RIEGL has recognized this trend and aligned its product range in this direction. RIEGL's typical accuracy/precision and the multi target capability, in combination with exceptional measurement ranges, wide field of views, extremely high laser pulse repetition rates, and fastest line speeds are the basis for the users' success. These key attributes allow UAS flights at maximum possible operating altitudes resulting in highest possible area coverage. Both time in the field and acquisition flight times are reduced significantly resulting in lower overall costs and increasing the safety in UAS applications. At the same time even more accurate point cloud data with complete coverage can be acquired. This increases the flexibility and most importantly the efficiency of the platform used for the project.

In short: High-performance sensors from RIEGL are the optimal tool for the professional service provider in UAS-based surveying.

RIEGLVUX-18024— Lightweight and Versatile UAV LiDAR Sensor for High-Speed Surveying Missions

The new RIEGL VUX-18024 offers a wide field of view of 75 degrees and an extremely high pulse repetition rate of up to 2.4 MHz. These features in combination with an increased scan speed of up to 800 lines per second make it perfectly suited for high-speed surveying missions and applications where an optimal line and point distribution is required. Typical applications include mapping and monitoring of critical infrastructure like power lines, railway tracks, pipelines, and runways. The RIEGL VUX-18024 provides mechanical and electrical interfaces for IMU/GNSS integration and up to 5 external cameras, mirroring the form factor of the VUX-16023. For smooth and straight forward data storage, an internal SSD memory with 2 TByte storage capacity and a removable CFast memory card are available.

This sensor further complements RIEGL's already proven VUX-12023, VUX-16023, and VUX-24024 series and is available as a stand-alone sensor or in various fully



integrated laser scanning system configurations with IMU/GNSS system and optional cameras.

RIEGLVUX-24024— Lightweight Aerial LiDAR Sensor with Enhanced Scanning Performance

The RIEGL VUX-24024 is the new enhanced version of the well-established RIEGL VUX-240, now offering higher pulse repetition rates and faster scanning speed for further increased field performance and workflow efficiency. A wide field of view of 75 degrees and an extremely fast data acquisition rate of up to 2.4 MHz, which results in a measurement rate of up to 2 million measurements per second, make the sensor perfectly suited for high point density applications like power line, rail track, and pipeline inspection. Its increased scan speed of up to 600 lines per second allows operations not only from fast flying UAVs, but also small helicopters, gyrocopters and other crewed aircraft at operating flight altitudes up to 4,700 feet.

Mechanical and electrical interfaces allow for the optional integration of an IMU/GNSS system and up to 4 cameras. Data can be stored either on the internal 2

TByte SSD Memory or with a removeable CFast memory card providing quick data transfer to a PC.

RIEGLminiVUX-Series - Now In Combination with RiLOC, an Entry-Level IMU/GNSS System

In addition to the stand-alone versions of the RIEGL miniVUX-1UAV and the miniVUX-3UAV LiDAR sensor, RIEGL also offers system solutions with IMU/GNSS systems and cameras.

Now RIEGL provides RiLOC, an integrated component to complement RIEGL's kinematic LiDAR systems for localization and orientation of LiDAR data in a reference coordinate system. This fully integrated subsystem with a small and lightweight form factor is directly attached to the housing of the miniVUX-1UAV or miniVUX-3UAV with a total system weight of only 1.75 kg. RiLOC itself consists of one or two GNSS receivers, an inertial measurement unit and a data acquisition controller with accompanying software. It makes use of tight coupling in processing inertial, GNSS and LiDAR data providing a new entry-level option for RIEGL's cost effective UAS LiDAR system solutions.

Genesys International and Survey of India Sign a Strategic Partnership to Transform India's Geospatial Landscape



In a landmark collaboration, Genesys International, and Survey of India have joined forces to revolutionize India's map content. This strategic partnership aims to create Digital Twins of major cities and towns, leveraging Genesys' all India highly accurate navigable maps, the Genesys constellation of sensors and SOI's recently launched CORS network which allows for real time high precision positioning data. This collaboration is aligned with India's National Geospatial Policy 2022, promoting self-reliance in geospatial data production and usage.

The collaboration introduces the India Map Stack initiative, synergizing Genesys' expertise with SOI's technical infrastructure, delivering previously unavailable data layers such as high-precision 3D data, Digital Terrain Models (DTM), Digital Surface Models (DSM), and orthoimagery. This comprehensive dataset forms the bedrock for creating detailed and accurate urban representations. Genesys International has garnered acclaim for developing highly accurate, fully navigable road datasets encompassing 8.5 million kilometers, 40 million Points of Interest (POIs) and addresses, along with an unprecedented 1 million kilometers of 360-degree panoramic imagery across Indian towns and cities.

Leveraging its Genesys constellation of LIDAR and optical sensors, the company stands as a pioneer in Digital Twin and 3D map creation. SOI's Continuously Operating Reference Stations (CORS) network, comprising 902 stations across all states and Union Territories, provides real-time, high-precision positioning data. By seamlessly integrating CORS data, Genesys will ensure that its Digital Twins faithfully mirror the dynamic urban landscape with unparalleled precision.

This integration empowers applications such as urban planning, telecom signal assessment, disaster management, and infrastructure development with accurate and reliable geospatial insights. Key Highlights of the Collaboration: Genesys will generate Geospatial 3D Digital Twins for major Indian cities and towns. SOI will provide CORS datasets to Genesys.

SOI will offer administrative boundaries of major Indian cities and towns. Genesys and SOI will collaborate on the urban 3D Data Model. Genesys will acquire accurate geospatial datasets using advanced surveying equipment and ground validations.

Genesys will license its geospatial data products to end-users in a "Content-as-a-Service" model. Joint efforts will be made to apprise city administrations of the utility of accurate geospatial datasets through technical workshops. The collaboration was marked by an event attended by senior government officials and industry leaders, showcasing Genesys International's cutting-edge geospatial solutions that actively address complex urban challenges.

Quantum Systems, Phase One, and Trimble unveil groundbreaking survey grade UAV solution with the launch of Phase One P5 camera.

In a groundbreaking collaboration, Munich-based drone manufacturer Quantum Systems GmbH has joined forces with Phase One and Trimble to introduce a cutting-edge survey-grade Unmanned Aerial Vehicle (UAV) solution, propelled by the launch of the Phase One P5 128-megapixel camera. This collaboration marks a generational leap in UAV-based mapping and surveying capabilities, addressing critical challenges faced by the architecture, construction, and engineering industries.

Challenges in the Industry

The surveying and construction sector grapples with time constraints, resource limitations, and potential project delays leading to costly fines. Traditional surveying methods prove time-consuming, exacerbating challenges in monitoring construction progress efficiently.

The Quantum Systems Trinity Pro Advantage

Quantum Systems elevates the capabilities of its Trinity Pro mapping drone by seamlessly integrating the Phase One P5 camera. The Trinity Pro's lightweight design and extended flight capabilities enhance productivity, addressing the industry's surveyor shortage. With over 75,000 flight hours of proven reliability, the Trinity Pro ensures accurate data collection and minimizes maintenance requirements.

Phase One P5: A Technological Marvel:

The Phase One P5 camera, purpose-built for aerial surveying via drone, boasts a 128-megapixel resolution, addressing conventional camera shortcomings in speed, weight, and data quality. Designed as an end-to-end surveying instrument, it integrates seamlessly into the Trimble Business Center workflow, setting a new standard for engineering surveying.

Benefits for Construction Engineering Professionals

The integration guarantees precision, securing survey-grade data accuracy critical for construction projects. The joint solution streamlines large-scale data collection, fostering confident decision-making while minimizing post-processing efforts.

Revolutionizing Aerial Engineering Surveying

The Phase One P5 Camera, with its electronic global shutter and precisely calibrated lenses, minimizes post-processing requirements, ensuring high-quality data preservation. This transformative solution opens new horizons for professionals in aerial engineering surveying, empowering surveyors to work with unmatched precision across various applications.

"We are proud to introduce a pioneering solution that not only addresses the profound challenges faced by the surveying and construction industry but also sets new benchmarks for efficiency and precision. Our collaboration with Phase One and Trimble has yielded a game-changing survey-grade UAV solution." - Robert Leake, Head of Commercial Sales, Quantum Systems.

"Each Phase One P5 camera undergoes factory metric calibration and is supplied with a calibration certificate. When integrated with the Trinity Pro system, the Phase One P5 swiftly and accurately covers large survey areas, resulting in significant time and cost savings compared to traditional mapping and surveying methods." - Michael Messerschmidt, Director Product Management Unmanned, Phase One.

EHANG OPENS ITS EUROPEAN URBAN AIR MOBILITY CENTER FOR EVTOL AIRCRAFT, IN SPAIN

EHang Holdings Limited the world's leading Urban Air Mobility ("UAM") technology Platform Company, announced the inauguration of its first European UAM Center in Spain. Located inside the Lleida-Alguaire International Airport ("LEDA"), the center represents the first-of-its-kind in Europe for unmanned electric vertical take-off and landing (eVTOL) aircraft, setting a benchmark globally for the effective integration of eVTOL aircraft operation with airport infrastructure, air traffic management systems, operational procedures, and other information technologies. The inception of this UAM center, a globally pioneering initiative, arises from the collaboration agreement signed between EHang and Aeroports de Catalunya in the field of UAM and will enable European aviation and airport sectors to be positioned at the forefront of global Advanced Air Mobility.

On October 13th, 2023, the Civil Aviation Administration of China (CAAC) issued the Type Certificate (TC) for EHang's EH216-S passenger-carrying Unmanned Aircraft Vehicle (UAV) System. An unprecedented milestone in the aviation industry, the EH216-S is the first unmanned eVTOL in the world to obtain TC and be qualified for commercial passenger-carrying UAV operations in China. The EH216-S deployed at EHang's European UAM Center will foster the accumulation of operational experience as well as invaluable knowledge. By integrating vast flight experience gathered from various locations worldwide, this collective information can be leveraged to the development of technological solutions, regulations, processes and procedures for the safe and efficient integration of eVTOL aircraft into European airspace in the future.

The UAM Center includes a vertiport that is fully compliance with EASA's design criteria and will enable seamlessly incorporation with the airport terminal, platform, control tower, equipment, procedures and regulations. This state-of-the-art vertiport will set a benchmark for global UAM infrastructure and accumulate a vast amount of knowledge and expertise on the vertiport establishment and operations, which will enable intelligent eVTOL operating models and facilitate their smart deployment across multiple locations.



During the inauguration event, Mr. Huazhi Hu, Founder, Chairman and CEO of EHang, stated, "The establishment of EHang's European UAM Center marks an important step forward in the Company's international development. Through this world-class UAM center, EHang expects to manifest its strong commitment with the development and deployment of UAM in Europe. EHang aims to share our certified and validated technology and operational experience with our partners around the world in the future to make our shared vision for benefiting all of society with safe, autonomous and eco-friendly UAM solutions."

Mr. Marc Sanglas, Secretary of Mobility and Infrastructure of Catalanian Government in Spain, commented, "We are especially proud of the

cooperation with EHang, a leading technology company in the development of unmanned aerial vehicles in the world, to whom we are grateful for having chosen our international airport as their first European UAM Center."

Ms. Victoria Xiang, COO of EHang Europe and Latin America, commented, "EHang's European UAM Center was initially conceived for supporting the Company's operations and activities under SESAR-JU's U-ELCOM and EUSPA's SAMVA projects. In addition, we are looking at scaling its applications to advance innovative air mobility projects as well as EASA's certification and airworthiness requirements to further promote industry development and make UAM a reality in Europe, which is a future we are looking forward to creating."

VX4 PROGRAMME MOVES TO THE NEXT PHASE



Vertical Aerospace (Vertical) a global aerospace and technology company that is pioneering zero-emissions aviation provides an update on its overall programme.

Flight Test Update: Vertical concluded its remote thrustborne flight test campaign in July 2023, as the first full-scale VX4 prototype reached its target speed of 40kts (70 kmph), demonstrating exceptional overall stability and control. Performance targets were generally exceeded by 10-30% during hover and low speed flights. The prototype performed especially well in sustained hover, typically the most challenging regime for a VTOL aircraft, where it maintained level flight for longer than anticipated. The aim of these thrustborne flight tests was to verify acceptable stability, battery efficiency and control characteristics, aerodynamics, structural loads, performance and vibration throughout this speed range - all of which were achieved.

Incident Update : Vertical continued further uncrewed flight tests following the completion of the remote thrustborne flight test campaign. The purpose of these was to understand how the aircraft performed outside of its expected operating conditions before the aircraft's planned retirement.

During one of these test flights, an unexpected fault occurred causing the aircraft to enter a stable descent, before being damaged on impact with the ground. Vertical completed a swift and thorough investigation and submitted a report to the Air Accidents Investigation Branch (AAIB). Vertical's investigation identified the root cause to be a fault with a propeller. This early generation propeller had already been redesigned prior to the incident, with the issue fully resolved ahead of the next phase of testing. Further recommendations by the investigation are being implemented by Vertical. Vertical believes transparency and openness is fundamental to the safety of aerospace. It therefore intends to provide a further full update to the industry on the incident once the AAIB's investigation has concluded.

VX4 Programme Update : Supported by the learnings from the completed thrustborne campaign, the VX4 and its certification programme remains on track with no changes to timelines. The assembly of a second significantly more advanced full-scale VX4 prototype is underway at GKN Aerospace's Global Technology Centre. This demonstrator is expected to be ready to fly early

next year. Its components will include technology from most of Vertical's certification partners: Honeywell, GKN Aerospace, Hanwha, Solvay, Leonardo and Molice. An additional, identical full-scale aircraft has also now been approved and is expected to be flying in the second half of 2024. These upgraded full-scale aircrafts' structures and subsystems will be tested in line with certification standards. Both will require rigorous regulatory oversight, including a Permit to Fly from the UK Civil Aviation Authority, to progress to piloted flying.

Stephen Fitzpatrick, Vertical Founder and CEO, commented: "We are pleased with our flight test progress to date and the data, insights and invaluable learnings we have collected. While a fault of any sort is disappointing, it is not wholly unexpected at this stage of testing a novel aircraft. I am pleased that as a result of our expert team we have isolated the cause of the fault and been able to provide the AAIB with our report within 14 days of the incident. Our planned second upgraded prototype, which will include most of our top tier partners' technology, will have us in the air early next year and we remain on track for our certification timelines".



Kratos XQ-58A Valkyrie Completes USMC PAACK-P Program Flight

Kratos Defense & Security Solutions, Inc. a Technology Company in the Defense, National Security and Global Markets and an industry-leading provider of high-performance, jet-powered unmanned aerial systems announced the Marine Corps XQ-58A Valkyrie, a highly autonomous, low-cost tactical unmanned air vehicle successfully completed its first test flight October 3, 2023, at Eglin Air Force Base, Florida. Kratos partnered with the Marine Corps, the Office of the Undersecretary of Defense for Research and Engineering (OUSD (R&E)), the Naval Air Systems Command and Naval Warfare Center Aircraft Division to facilitate the ongoing research, development, test and evaluation of the Marine Corps XQ-58A Valkyrie.

This joint collaboration was supported by the 40th Flight Test Squadron, 96th Test Wing and the Naval Air Warfare Center Aircraft Division. This flight marks a key milestone in the Marine Corps' Penetrating Affordable Autonomous Collaborative Killer - Portfolio (PAACK-P) program. Future test flights inform Marine Corps XQ-58A Valkyrie requirements for the Marine Air-Ground Task Force Unmanned Aerial System Expeditionary (MUX) Tactical Aircraft (TACAIR).

"This XQ-58A test flight and the data collected inform future requirements for the warfighter, while fueling innovation and experimentation opportunities within Marine Corps modernization and industry partnership," said Scott Bey, portfolio manager of OUSD (R&E), Mission Capabilities, Prototypes and Experiments.

The aircraft performed as expected. The XQ-58A has a total of six planned test flights with objectives that include evaluating the platform's ability to support a variety of intelligence, surveillance, and reconnaissance (ISR) missions; the effectiveness of autonomous electronic support to crewed platforms; the potential for AI-enabled platforms to augment combat air patrols; and continuing to mature other manned-unmanned teaming (MUM-T) capability objectives.

"The Marine Corps constantly seeks to modernize and enhance its capabilities in a rapidly evolving security environment," said Lt. Col. Donald Kelly, Headquarters Marine Corps Aviation Cunningham Group and Advanced Development Team. "Testing the XQ-58 Valkyrie determines requirements for a highly autonomous, low-cost tactical UAS that complements the need for agile, expeditionary and lethal capabilities in support of both the Marine Corps' stand-in force operations in austere environments and the Joint Force."

ArcosJet and Lilium Announce Purchase of 10 eVTOL Jets

ArcosJet DMCC and Lilium N.V. developer of the first all-electric vertical take-off and landing (eVTOL) jet, have announced ArcosJet's purchase of 10 Lilium Jets, expected to be delivered through 2026 & 2027. Following the appointment of ArcosJet as an exclusive authorized dealer for private sales of the Lilium Jet in their region, ArcosJet's purchase means eVTOL travel will soon be available for customers in the Middle East.

The Lilium Pioneer Edition Jet will offer the largest cabin in its category, low-noise, high-speed regional transport with zero operating emissions, where passengers will enjoy large panoramic views in its spacious 4-seat cabin. Deliveries of the premium eVTOL jet are expected to begin in early 2026. The Lilium Jets will be delivered to customers with a comprehensive maintenance program, pilot training, and two charging stations.

"Today we are pleased to announce the details of our purchase of Lilium Pioneer Edition Jets and are confident that the aircraft will quickly find buyers and lay the foundations for the development of sustainable air transport in the Middle East. Together with Lilium, ArcosJet offers its customers best-in-class innovations and developments for the future of transport. We see this as the most profitable investment in the high-tech and sustainable future of aviation, as well as in the development of regional air mobility," said Mikhail Alenkin, ArcosJet founder and CEO.

"Together with ArcosJet, we are excited to be entering new markets by introducing our revolutionary Lilium Jet and thrilled with their firm commitment for 10 jets. With ArcosJet's experience and expertise in private aircraft sales, I am confident our partnership will help customers appreciate the unique capabilities of eVTOL flight," said Sebastien Borel, Chief Commercial Officer at Lilium.

The Lilium Pioneer Edition Jet is the first planned model of the Lilium Jet and will comfortably seat four passengers on estimated non-stop flights of up to 175 km at 250 km/h. The first manned flight of the type-conforming aircraft is scheduled for late 2024, with type certification expected in late 2025.



Joby Flies Quiet Electric Air Taxi in New York City

Joby Aviation, Inc. a company developing electric vertical take-off and landing (eVTOL) aircraft for commercial passenger service announced that it successfully performed an exhibition flight in New York City yesterday, marking the first ever electric air taxi flight in the city and the first time Joby has flown in an urban setting. The aircraft was flown on Sunday, November 12th, from the iconic Downtown Heliport in Manhattan, NY, where today, New York City Mayor, Eric Adams, announced the city's intention to electrify the heliport, laying the groundwork for New York to become the global leader in the adoption of clean, quiet flight. Joby's Manhattan flight and participation in the press conference - during which the aircraft is expected to fly again - follows several days of preparation flights at the HHI Heliport in Kearny, New Jersey.

"By electrifying one of the most famous heliports in the world, New York is demonstrating global leadership in the adoption of electric air travel. We're grateful for the support of the city, and we're honored to be working with visionary partners like Delta Air Lines to bring our air taxi service to this market," said Joe Ben Bevirt, Founder and CEO of Joby Aviation. "We plan to make quiet, emissions-free flight an affordable, everyday reality for New Yorkers, while significantly reducing the impact of helicopter noise."



Joby previously announced through its partnership with Delta Air Lines that it expects New York to be one of its early launch markets after receiving certification from the Federal Aviation Administration (FAA). The company plans to offer fast, quiet journeys using its piloted, four-passenger electric aircraft which has zero operating emissions. Joby's aircraft is optimized for rapid, back-to-back flights and can fly up to 100 miles on a single charge, covering 99% of all trips taken today across New York City's five boroughs. While traveling from Manhattan to John F. Kennedy International Airport (JFK) can take more than an hour by car, Joby expects the trip to take just seven minutes by air.

"The Adams Administration has been a leader in driving technology innovation and economic growth while simultaneously improving quality of life," said New

York City Economic Development Corporation (NYCEDC) President & CEO Andrew Kimball. "EDC's new strategy for the Downtown Manhattan Heliport reflects these priorities while making it an industry leader in the embrace of eVTOLS - a quieter and greener helicopter alternative - while at the same time facilitating maritime freight with last mile e-bike deliveries that takes trucks off the roads."

Joby and Delta are working closely with the Port Authority of New York and the New York City Economic Development Corporation (EDC) as they plan for initial operations, including the development of infrastructure at JFK and LaGuardia International Airport (LGA). This builds on significant recent investments Delta has made in upgrading the customer experience at its New York hubs.

"Delivering exceptional experiences for our customers is why Delta has invested over \$7B in New York City, especially at our LaGuardia and JFK hubs," said Gail Grimmer, SVP of Sustainability Performance and Strategic Partnerships at Delta. "Today's announcement demonstrates the great progress that's been made toward launching clean, quiet and convenient air taxi services for Delta customers traveling to and from New York, and is a testament to our innovative partners at Joby and the support of Mayor Eric Adams in advancing new and sustainable technologies."

Archer and Air Chateau Announce Air Chateau's Planned Purchase Of Up To 100 Midnight Aircraft Worth Up To \$500M

Archer Aviation Inc. a leader in electric vertical takeoff and landing (eVTOL) aircraft, and Air Chateau International DWC LLC, one of the leading private aviation operators in the UAE, at the Dubai Air Show 2023 signed an MOU covering a planned purchase by Air Chateau of up to 100 of Archer's Midnight eVTOL aircraft with an approximate value of \$500M and providing for an initial non-refundable, pre-delivery payment of \$1M by December 31, 2023. Air Chateau plans to own and operate the Midnight aircraft in the region. The two companies will now work to formalize the definitive agreements covering the planned purchase over the coming months, with \$4 million of additional pre-delivery payments contemplated to be paid following signing.

Air Chateau was the first private heliport operator company in the UAE to have its heliport and lounge terminal at the land side of Dubai World Central Al Maktoum International Airport, Dubai Heliport and with multiple touch points across the UAE. Air Chateau's operations offer last mile services targeted at ultra-high

net worth individuals, including connectivity between airports, cities and strategic points and key attractions. The relationship is intended to further strengthen Archer's recently announced plans to commence air taxi operations in both Abu Dhabi and Dubai in 2026. The parties intend to explore opportunities to collaborate on bringing in the infrastructure investment necessary for these cities to be ready for these planned operations.

"It was an honor hosting Air Chateau's team at the Dubai Air Show 2023 during which they were able to touch, see and feel our aircraft as it headlined the show," said Archer Founder and CEO, Adam Goldstein. "Their recognition that our Midnight aircraft meets what the customer demands in the UAE market and desire to secure the purchase of up to 100 Midnight aircraft is another exciting validation of our efforts to bring to market an aircraft that will revolutionize how people move in and around cities."

"This remarkable opportunity signifies the ongoing evolution of Air Chateau, heralding a transformative era in our industry. Embarking on our

journey into being an infrastructure provider two years ago for helicopters, today, we stand at the precipice of realizing our vision for the future of urban air mobility with eVTOLs in Dubai and across the UAE. The support of our visionary partners has been instrumental in our journey, and as we unveil this exciting chapter, we are privileged to share a collective vision. We are very grateful for having the opportunity to pave the way for the future of Air Mobility in Dubai with Archer" said Dr. Samir Mohamed, Chairman and Founder of Air Chateau.

In October, as part of Archer's announcement of its plans to commence air taxi operations in the UAE in 2026, Archer also laid out its intent to build an engineering Center of Excellence to support the growing advanced air mobility industry in the UAE and across the Middle East and to collaborate with local manufacturing companies and Maintenance, Repair, and Overhaul providers in Abu Dhabi to spearhead the production of eVTOL aircraft, furthering Abu Dhabi's efforts to grow its Smart and Autonomous Vehicle Industry cluster.



Drones World
Editor Kartikeya
in conversation with
Mr. Mats Sällström,
CEO, EVERDRONE



Q Our readers love to hear the stories from the industry people. Why don't you share yours?

A My interest in drones started as a personal fascination with technology. Coming from a background in project management, marketing and business development I had experience from working with companies such as Volvo Cars, Electrolux and LEGO. Over time, I developed a genuine interest in creating something that was directly beneficial for society and by chance my paths crossed with a group of people who was just starting up Everdrone. This was back in 2017. What really drives me is the potential to use this technology for something truly impactful – saving lives. Everdrone isn't just

another business for me; it's about making a tangible difference by creating a safer society. Furthermore, flying robots that saves lives also represents a very exciting vision for society with a sci-fi feeling to it. This is 2023, we should already be having this!"

Q What are the various products/Services that EverDrone has in offer currently?

A "At Everdrone, we're focused on using drones to improve emergency services. Our main offerings include delivering medical supplies quickly, like AEDs, and providing a real-time view of emergency scenes to the dispatch center and responders on the ground. We're not selling drones; we're providing a full-service solution to make

emergency responses more effective."

Q What are the challenges in Implementing & Promoting Drones as First Responders? How do you plan to overcome them?

A "Integrating drones into emergency services is a complex challenge. It's not just about the technology; it's about fitting into existing emergency protocols, navigating regulatory requirements, and ensuring absolute reliability. We're tackling these challenges by constantly innovating and working closely with regulatory authorities and our strategic partners such as Region Västra Götaland (vgregion.se), Air ambulance KSS (aakss.org.uk) and the Rescue Services in Copenhagen (hbr.dk)."

Q Who will be your targeted customers – Commercial/Defense Drone Market? Which are the regions you are focusing on more to increase sales in future?

A “Everdrone exclusively work with civilian customers. We primarily serve healthcare institutions, government bodies, and emergency service organization. While we started in Sweden, we’re now expanding our reach to other countries, including Denmark, the UK, and France. Our aim is to make our life-saving drone technology globally accessible.”

Q What are the challenges and opportunities you see in BVLOS Operations?

A “BVLOS is a basic requirement for our operations but certainly come with its own set of challenges, particularly in safely sharing airspace and maintaining reliable communication. We aim to combine the latest in drone regulations with more traditional and established procedures in the aviation landscape. Currently our BVLOS operations are enabled primarily through coordination with local ATC. However, to make our service truly scalable we are pursuing several alternative roadmaps to manage air risk that will allow us access to more airspace – U-space being one of these roadmaps.”



Q What is your biggest USP that differentiates the company from competitors?

A “Our tagline, ‘When time is life,’ perfectly encapsulates our USP. At Everdrone, we recognize that in emergency situations, every second counts. Our drones are designed for precision in delivering life-saving medical supplies and providing crucial situational awareness. Rapid response capability is a vital component of our service. Next to safety, each design decision we make is linked to the overall purpose of saving time. By saving time we empower blue light-organizations to use their resources smarter, keep their personnel safe and ultimately save more lives.

Additionally, what truly sets us apart is our deep understanding of

integrating drones with emergency response. We don’t just provide a product; we ensure deep operational integration with emergency services. Our commitment is to work closely with our customers, understanding their needs and challenges, and tailoring our technology to seamlessly fit into their response protocols. This approach is not just about deploying advanced technology; it’s about creating a synergistic relationship where our drones become an integral part of the emergency response ecosystem.”

Q What is the most unrevealed thing about EverDrone that we would not find on your website?

A “Something people might not know about Everdrone is our deep



involvement research and development. We work closely with medical and technical experts to ensure our solutions are not just innovative but also clinically relevant and effective in real-world scenarios. The most recent result of this is that our system has been validated through an article published in Lancet Digital Health ([https://www.thelancet.com/journals/landig/article/PIIS2589-7500\(23\)00161-9/fulltext](https://www.thelancet.com/journals/landig/article/PIIS2589-7500(23)00161-9/fulltext)).

Q **Moving ahead by 2-3 years, what are your expansion plans focusing on the Drones as a First Responders?**

A “In the next few years, we’re excited to increase our capacity and improve our technology. Our new E2 drone ([https://everdrone.com/news/2023/10/24/e2-](https://everdrone.com/news/2023/10/24/e2-drone-to-revolutionize-)drone-to-revolutionize-

emergency-response/) is a big part of this plan. It’s not just about expanding geographically; we’re aiming to transform how emergency response is conducted with our technology targeting both emergency care, fire and rescue services and law enforcement.

From being focused on the very specific concept of delivering defibrillators (AEDs) by drone, starting in 2024 we are offering a much more generic emergency response capability. With the E2 platform fully deployed, and through strategic partnerships with emergency response clients, we are working towards operational excellence. For the time being we are the only company in the world performing drone as first responder services with a medical focus in urban areas but looking ahead there will certainly be competition. To maintain our pole position, we will continue to excel in technical and operational integration with emergency dispatch, produce scientific evidence and develop the most relevant AI tools for our customers.”





Drone Delivery Canada Corp. Completes First U.S. Demonstration with West Michigan Drone Delivery MMFP Pilot Project

Drone Delivery Canada Corp. announced it completed the West Michigan Drone Delivery MMFP pilot project in collaboration with operational partners Workhorse Aero, Airspace Link and Caduceus Medical Logistics, as well as community partners West Michigan Regional Airport, Michigan Economic Development Corporation (MEDC), Michigan office of Future Mobility & Electrification, Next Energy and Lakeshore Advantage. DDC flew its Sparrow RPA and Workhorse Aero flew its Horsefly RPA to successfully demonstrate the delivery of medical products and handoff to Caduceus Medical Logistics in Holland, Michigan. The initiative aimed to demonstrate the efficiency and viability of incorporating drone delivery for medical supplies, showcasing a flight route of 0.67 miles (1.1 km) compared to a 1.2 mile (1.9 km) traditional driving route.

Caduceus Medical Logistics, the medical ground courier operator, tested drone delivery integration capabilities for autonomous and route delivery extension as well as the use of electric vehicles for CO2 emissions reduction. The operation leveraged Airspace Link's AirHub® Portal digital infrastructure platform to generate a comprehensive analysis for the ground and air risks existing within the City of Holland and specific area of operations. The digital platform enabled the project team to ensure the safety and efficiency of the drone deliveries.

The project accomplished a total of 23 deliveries over 2 days. All demonstrations conducted during the pilot project strictly adhered to 14CFR Part 107 regulations, ensuring compliance with Federal Aviation Administration (FAA) guidelines for unmanned aerial systems. The West Michigan Drone Delivery MMFP pilot project sets the state for future advancements in autonomous aerial deliveries, emphasizing the potential for increased efficiency, reduced environmental impact and improved accessibility in medical supply chain logistics.

Medical drone network launches in Romania

Romanian private medical services provider MedLife has announced the launch of a medical drone logistics network in partnership with Australia's Skyy Network. The network will initially employ three Swoop Aero Kite drones, and will initially operate exclusively in Bihor and Arad counties, in the northwest of Romania.

The network will connect MedLife's facilities in the cities of Oradea and Arad, as well as connect both with four collection points in Aleșd, Beiuș, Marghita, and Salonta, collecting medical samples for testing. However, MedLife stated that it eventually plans for the network 'to be extended across the entire medical network in the country'. More immediately, the next phase will see new connections being added in Arad, Hunedoara, Mehedinti, Gorj, Timis, and Caras-Severin counties.

The launch of the program follows 'almost three months of tests and preparations'. MedLife added that 'the first flights with real patient samples have already been carried out', and that approvals from all relevant local and national authorities have been obtained.

MedLife stated that collection times would be reduced by approximately 50 per cent compared with ground transportation - with average times from the collection points now being between 19 and 28 minutes, while transportation between Arad and Oradea takes under an hour.

"By reducing the delivery time of samples, avoiding delays generated by traffic, increasing the number of samples we can receive and analyze, we can guarantee patients the rapid release of results for a wide range of laboratory services," said Dr Robert Beke, Executive Director of MedLife Group's Laboratory Division. "In fact, patients will benefit from same-day results for most tests. In addition, we are also talking about a sustainability initiative, by integrating a transport alternative with a lower carbon footprint compared to car transport."



Dronamics and Aramex to Partner on Cargo Drone Deliveries Globally

Dronamics, the world's first cargo drone airline and Aramex have announced a LOI (Letter of Intent) agreement for cargo drone flights leveraging Dronamics' technology and Aramex's fleet management capabilities.

Dronamics, renowned for engineering and operating remotely-piloted cargo aircraft, will supply its innovative drone technology to Aramex to enable same-day middle-mile and long-range deliveries. Aramex, one of the largest companies in the logistics sector globally, headquartered in UAE and listed on the Dubai Financial Market, was founded in 1982 and moves 100 million parcels annually. Sharing a common vision of the cargo drone delivery market, Dronamics and Aramex will explore joint deployment opportunities in the United Arab Emirates initially, followed by other key markets including South Africa and Australia.

This partnership, facilitated by the Strategic Development Fund (SDF) as a strategic investor in Dronamics, will see Aramex, known for setting the standard in express logistics and transportation, offer the innovative cargo drone solution developed and operated by Dronamics, at a larger scale. Dronamics can offer up to 80% faster, 50% cheaper and 60% lower in CO2 emissions freight compared to traditional



transport services, making it well suited to express deliveries, a sector Aramex is known for. Its remotely-piloted aircraft, the Black Swan, requires 400 meters only to land and take off, a viable solution for reaching remote and underserved areas, where traditional airport infrastructure is missing or underdeveloped.

"We're excited to collaborate with Aramex, integrating Dronamics' cargo drone technology to bring the transformative benefits of rapid, cost-effective, and sustainable same-day delivery to the global stage," Svilen Rangelov, Co-Founder and CEO of Dronamics

"We are delighted to partner with Dronamics

to explore their cargo drone capabilities within our operations. This aligns well with our continuing efforts towards harnessing innovation for enhanced operational efficiency, providing an exceptional customer experience, and minimizing our carbon footprint across the UAE and our global operations. Alaa Saoudi, Aramex Chief Operating Officer - Express Management

"This partnership with Dronamics adds a new element to our Future vehicle program. We hope to pilot flights with Dronamics in 2024 partnering with the broader ecosystem of regulators and enablers" Angad Singh, Aramex Global Innovation Director

WORLD-FIRST: TRICK OR TREAT TAKES TO THE SKIES WITH MANNA DRONE DELIVERY

In a world-first, Manna Drone Delivery, Europe's largest and most-advanced drone delivery operator, took trick or treating to new heights - delivering candy to families in North Texas by drone. Given the incredibly wet weather the Dallas/Fort Worth area has been experiencing, kids can stay dry and still participate in the Halloween festivities.

Trick or treating kicked-off Manna Drone Delivery's first US operations - where they'll be delivering to residents at Pecan Square by Hillwood Communities. Residents will have the opportunity to order a range of food and beverages from both national and local retailers - including a wide selection of Halloween chocolates and candies.

"After over four years of operations and over



150,000 flights logged in Europe, we are excited to be touching down in the United States to offer the residents of Dallas/Fort Worth a lightning-quick and sustainable home delivery service," said Andrew Patton, Head of US for Manna Drone Delivery. "We are taking Halloween to new heights, with a fun new

way for kids to trick or treat - especially when the weather isn't very Halloween compatible!"

"We're excited to see Manna commercialize drone delivery in the US at the AllianceTexas Mobility Innovation Zone, bringing an innovative last-mile delivery solution to Pecan Square residents," said Christopher Ash, senior vice president of aviation business development for Hillwood. "At Hillwood, we are a team collaborating to bring innovative supply chain technologies to North Texas and provide next-level amenities to the communities we reach."

Manna is also partnering with the Tarrant Area Food Bank, which serves nearly 1 million meals a week to residents in North Texas, by making a donation for every flight conducted this year.

DZYNE Technologies Announces Development of New Major Manufacturing Facility in Irvine, California

DZYNE Technologies, a leading provider of advanced uncrewed autonomous systems (UAS) for defense applications, today announced the development of a new 125,000 square foot facility in Irvine, California. The new facility will house DZYNE's growing team of engineers, researchers, and manufacturing personnel, and will provide the company with the space and resources it needs to continue developing cutting-edge autonomous defense solutions for U.S. and international customers.

"The development of the new facility is a testament to DZYNE's strong partnership and commitment to the Department of Defense," said Matt McCue, President and Co-Founder of DZYNE Technologies. "DZYNE has worked closely with the DoD since our inception in 2012 to develop an array of long endurance, low-cost, loitering, and innovative UAS platforms. With the recently announced Replicator Initiative, we feel we are now perfectly suited to meet the Department's increased demand for autonomous defense capabilities. DZYNE's UAS are designed to meet the evolving needs of our warfighters and are expected to play a critical role in future operations for



the U.S. and its allies."

DZYNE's flagship products include the LEAP and ULTRA Long Endurance Aircraft (LEA), capable of providing 40+ and 80+ hours of continuous mission endurance, respectively. DZYNE's LEA products have accumulated worldwide over 50,000 operational flight hours, exemplifying their unmatched cost and performance benefits. In addition, DZYNE has partnered with leading DoD research and warfighting organizations to design and deliver an array of advanced ground- and air-launched Group 1-3 UAS

in support of various conventional and asymmetric customer mission needs.

Ben Slater, Chairman of DZYNE and COO of Highlander Partners, added "We are committed to providing the resources necessary to fuel DZYNE's growth and to deliver the cutting-edge technologies demanded by the DoD. DZYNE has established itself as an agile, rapid-response creator of innovative autonomous technologies that break the cost dynamic established by the old guard. Like DZYNE itself, this facility will be unique in the industry."

PDRL's AeroGCS GREEN Achieves Milestone as First Indian Drone Software Certified for IV&V per DO-278A AL5 Standard

In a groundbreaking accomplishment, PDRL proudly announces that its AeroGCS GREEN software has received Independent Verification and Validation (IV&V) certification from a reputed third-party agency. This certification attests to AeroGCS GREEN's compliance with the stringent DO-278A AL5 standard, ensuring the software's quality and performance for drone operations.

DO-278A, established by the Radio Technical Commission for Aeronautics (RTCA), outlines Software Integrity Assurance Considerations for Communication, Navigation, Surveillance, and Air Traffic Management (CNS/ATM) Systems for civil aircraft. The certification of AeroGCS GREEN on this civil aircraft standard marks a significant milestone for PDRL.

AeroGCS GREEN, a completely made-in-India drone software, has become the preferred choice for Indian drone manufacturers and is now



gathering international attention. PDRL recently supplied AeroGCS to a prominent UK-based drone manufacturer, expanding its global footprint.

Approximately 75% of type-certified agriculture drones in India utilize AeroGCS GREEN for drone operations management. The IV&V certification positions AeroGCS GREEN as a valuable asset for drone manufacturers seeking DGCA-type certification under The Drone Rule, 2021.

AeroGCS GREEN distinguishes itself with its user-friendly interface, intuitive project management capabilities, and a wizard flow that enhances operational fluidity and resource optimization. The software seamlessly integrates cloud services, facilitating collaboration and data management, reinforced by a robust Public Key Infrastructure (PKI) for cybersecurity.

With its rich API sets, AeroGCS GREEN is aiding large fertilizer companies in integrating the software into their applications, enabling efficient management, monitoring, and analysis of agricultural spraying information using drones. In a recent development, PDRL secured orders exceeding Rs 12 crores for AeroGCS GREEN from major drone manufacturers and industry players that placed orders for around 6500 licenses of AeroGCS GREEN and the AeroGCS Enterprise Subscription for their upcoming drone fleet.

SHIELD AI RAISES \$200M, REACHING \$2.7B VALUATION



Shield AI, the defense technology company building the world's best AI pilot for aircraft 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: Scale and deploy Shield AI's V-BAT Teams product domestically and internationally.

Accelerate tech integration with third-party uncrewed platforms.

"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.



vHive Earns Frost & Sullivan's 2023 Enabling Technology Leadership Award for its Best-in-Class Asset Digitization Software Platform

Vhive, a global market leader specializing in enterprise asset digitization, announced it has been recognized by Frost & Sullivan as a recipient of the 2023 Enabling Technology Leadership Award. This accolade recognizes vHive as a leading Digital Twins software solution provider for multiple industries, including telecom, renewable energy, and cranes, based on its years of technology innovation and proven success with enterprises worldwide.

vHive leverages cutting-edge technologies to deliver complete digital transformation of enterprise assets, enabling automated inspection, advanced analytics, simulation, and survey planning. With state-of-the-art artificial intelligence, a powerful digitization platform, autonomous data capture using proprietary Auto Discovery™ software, and a robust Digital Twin solution, the company provides customers with a comprehensive and reliable asset digitization solution that produces actionable insights, improves decision-making, maximizes productivity, and optimizes asset value.

"We're honored to have vHive's innovative technology recognized by Frost & Sullivan with this award" said Yariv Geller, CEO of vHive. "Since vHive's inception, our focus has been on providing a scalable enterprise solution that is easy to use. We view technology as a vehicle that enables anyone in the organization to perform otherwise impossibly complex tasks. By prioritizing a customer-centric approach and leveraging our development expertise, we deliver cutting-edge cloud-based solutions that create value for our customers."

According to Frost & Sullivan, vHive truly stands out from competitors based on its commitment to innovation and creativity, and its ability to launch new solutions with multiple applications and a far-reaching impact. The company pairs its technology focus with customer-centric values, thus earning a solid reputation in the asset digitization software platform market.

With its strong global customer base and dedication to continuous innovation, vHive aims to be the go-to solution for digitizing enterprise assets globally. Frost & Sullivan believes the company is well-positioned to drive the asset digitization space into its next growth phase, capturing market share and sustaining its leadership in the coming years.

QinetiQ US Awarded \$170M U.S. Customs and Border Protection contract for Tethered Aerostat Radar System (TARS)

QinetiQ US, has received a U.S. Department of Homeland Security (DHS) Customs and Border Protection (CBP) Air and Marine (AMO) Tethered Aerostat Radar System (TARS) Operations & Maintenance (O&M) III contract, comprising one base with four option years, valued at \$170M.

The team will provide operations and sustainment efforts on the TARS program which will include air, land, and maritime domain awareness and enabling a proactive and persistent detection and deterrence capability. The scope of work will also include aerostat operations, air-surface radar operations, ground control and data networking systems monitoring, and data analysis to increase the efficiency and effectiveness of the program. This capability is an integral part of the mission to detect, sort, intercept, track, and apprehend criminals in diverse environments at and beyond the U.S. borders.

"The CBP TARS program adds to our decades plus support to DHS and the CBP mission at our borders, while also providing us the opportunity to pull from our expansive CSISR portfolio, specifically in persistence surveillance," said Shawn N. Purvis, President, and CEO of QinetiQ US. "With a strong history and depth of expertise in national security initiatives, we are proud to be selected to help advance the mission of the CBP through the TARS program."

Employing tethered aerostats, TARS operators relay vital data to DHS to support monitoring border activity in real time. This data is also shared with the U.S. military and law enforcement partners conducting related air, land, and maritime missions. QinetiQ US and its partners will operate eight TARS sites, with six over the U.S.-Mexico border, one over the Florida Straits, and another over the northern Caribbean area.

"With the threat landscape changing rapidly and demands on domain awareness capabilities increasing, we will use a mission-first, data driven approach to modernize the TARS capability and maintain operations. Leveraging the expertise of partners C Speed, LLC, Elevated Technologies, LLC, and Skyship Services, Inc., we will bring best in class, end-to-end persistence surveillance capability to support some of the nation's most critical national security missions," said Jonathan Riksen, Executive Vice President over QinetiQ's support of DHS missions. "Our men and women protecting our borders are dealing with evolving threats from our advisories and we are proud to join CBP to both sustain and enhance operations to protect against these threats."





AeroGCS GREEN soars high as the first-ever Indian Drone Software to achieve **IV&V certification**, setting the standard with DO-278A AL5



PDRL'S AEROGCS GREEN ACHIEVES MILESTONE AS FIRST INDIAN DRONE SOFTWARE CERTIFIED FOR IV&V PER DO-278A AL5 STANDARD

Nashik, India

In a groundbreaking accomplishment, PDRL proudly announces that its AeroGCS GREEN software has received Independent Verification and Validation (IV&V) certification from a reputable third-party agency. This certification attests to AeroGCS GREEN's compliance with the stringent DO-278A AL5 standard, ensuring the software's quality and performance for drone operations.

DO-278A, established by the Radio Technical Commission for Aeronautics (RTCA), outlines Software Integrity Assurance Considerations for Communication, Navigation, Surveillance, and Air Traffic Management (CNS/ATM) Systems for Civil Aircraft. The certification of AeroGCS GREEN on this civil aircraft standard marks a significant milestone for PDRL.

AeroGCS GREEN, a completely made-in-India drone software, has become the preferred choice for Indian drone manufacturers and is now garnering international attention. PDRL recently supplied AeroGCS to a prominent UK-based drone manufacturer, expanding its global footprint.

Approximately 75% of type-certified agriculture drones in India utilize AeroGCS GREEN for drone operations management. The IV&V certification positions AeroGCS GREEN as a valuable asset for drone manufacturers seeking DGCA-type certification under The Drone Rule, 2021.

AeroGCS GREEN distinguishes itself with its user-friendly interface, intuitive project management capabilities, and a wizard flow that enhances operational fluidity and resource optimization. The software seamlessly integrates cloud services, facilitating collaboration and data

management, reinforced by a robust Public Key Infrastructure (PKI) for cybersecurity.

With its rich API sets, AeroGCS GREEN is aiding large fertilizer companies in integrating the software into their applications, enabling efficient management, monitoring, and analysis of agricultural spraying information using drones.

In a recent development, PDRL secured an order exceeding Rs 10 crores for AeroGCS GREEN from major drone manufacturers and industry players which placed an order for 5000 licenses of AeroGCS GREEN and the AeroGCS Enterprise Subscription for their upcoming drone fleet.

PDRL continues to lead the way in drone software innovation, with AeroGCS GREEN setting new standards in certification, performance, and global adoption.

Drones World
Editor Kartikeya
in conversation with

Mr. Sam Lapko,
CEO, LumaSky.show



Q How best can you describe the journey of LumaSky since its humble beginnings to where it is now?

A Starting as a small team of drone enthusiasts, we took a huge step forward both as a team and professionals. Our first shows used only a few dozens of drones and consisted of just 2-3 formations. Today, launching 3000 drones daily became quite an easy task. We managed to grow to a significant 5,000 drones and more than 50 professionals from various fields onboard. With the dedication of the crew members and the commitment of our highly valued partners, we gradually built the company known today for its fresh approach, innovative ideas, and creative drone show design. Sometimes we had good luck, other times not, but we consistently worked hard to push the boundaries not only of the field, but also of ourselves.

WE MANAGED TO GROW TO A SIGNIFICANT

5,000

drones and more than 50 professionals from various fields onboard.



Q Would you mind sharing the details of your services & nostalgic shows till date?

A Lumasky provides one of the most flexible drone show services on the planet. Since we develop our own drones, we have full control over all aspects of both hardware and software. This enables us to create designs that no other team can achieve. For example, our shows can start literally from the ground, creating patterns just one meter above the surface, which captivates the audience seconds after take-off. The speed at which our drones travel allows us to conduct complex yet beautiful transitions, making them a part of the show. Small in size and flexible in placement, our drones can also be used in confined take-off areas. Additionally, our outstanding personnel allow us to prepare displays in record time. There was an instance when a client, whose request was refused by another provider due to an unsuitable take-off area, needed a display ready in two days. We didn't sleep those nights, but the client was ultimately satisfied. We consistently strive to expand our global presence and introduce this technology to as many new countries as possible. In just two years, we have brought the first-ever drone displays to Bangladesh, Peru, Gabon, Angola, and many other countries.



Q Emerging technologies like block chain, IoT, Artificial Intelligence have found many usages in different fields. What can you comment on them?

A The development of these technologies in recent years has been truly impressive, and we strive to keep our fingers on the pulse. Our designers are working on implementing AI into creating designs for displays, while our programmers develop algorithms that automatically calculate trajectories for transitions, based on the entire display. Utilizing new technologies in our work allows us to reduce the time needed for display preparation and to provide even more flexibility to our clients.



Q What do you see as the biggest challenges & opportunities in drone Shows?

A As technology rapidly develops and becomes more widely available, we predict it may proliferate much like fireworks have. Nowadays, anyone can go to a store, purchase some firecrackers, and create a vibrant display right in their backyard. The invention of a stable and exceedingly precise indoor navigation system will also transform the landscape of drone shows, making it even more accessible. The level of regulation required today will likely decrease. Soon, every major football game could captivate fans with thousands of drones operating INSIDE the stadium, not just outside. Drone displays will become increasingly affordable, batteries will boast higher capacities, and soon we may see tens of thousands of drones participating in displays that go viral globally. Some even envision immense screens in the sky composed of numerous drones advertising your favorite brands in unprecedented ways.

Q What is your vision for LumaSky in the next 3-5 years?

A As technology enthusiasts, we will continue to develop our drones, our systems, and the algorithms we use to control them. As viewers become increasingly demanding and seek to be wowed in the most innovative ways, our creative team will strive to push the boundaries of what's possible. For instance, drones are not only quadcopters; there are plenty of fixed-wing solutions. Why not integrate them and compete with traditional jet air shows? We have many ideas, and I hope we'll bring many of them to life in the near future.

Q What is the best way to approach you for the Drone Shows?

A You can always contact us via our website, which can be found at lumasky.show. Alternatively, you can simply drop us a line via email at contact@lumasky.show, and our talented team will get in touch shortly.





DroneShield and Lockheed Martin Collaboration

DroneShield Ltd is pleased to announce its collaboration with Lockheed Martin, Australia's Science, Technology, Engineering, Leadership and Research Laboratory (STELaRLab). As part of this collaboration, DroneCannon Mk2, DroneShield's wide area non-kinetic effector, has been integrated into Lockheed Martin Australia's Agile Shield Program.

Agile Shield has been developed under the Next Generation Technologies Fund framework, as part of DST Group's Counter Improvised Threats Grand Challenge and is initially designed to counter uncrewed aerial systems (C-UAS).

Kevin McDonald, STELaRLab's Integrated Systems Lead for Agile Shield, commented: "The system brings together a number of Australian sensors and effectors with an open mission architecture to provide a rapid, scalable and flexible response to airborne threats. STELaRLab's contribution included development of the open mission systems architecture and acting as the prime systems integrator."

"The addition of proven C-UAS jammers, such as DroneCannon Mk2, is part of Agile Shield's planned transition from the virtual world to field demonstrations which occurred in October 2023."

Red McClintock, DroneShield Sales Director, added: "DroneCannon Mk2 is a globally recognised effector, in use both in the eastern-European theatre, as well as being selected and recommended by the U.S. DoD for base protection requirements. We are excited to be working with Lockheed Martin and DST Group's Agile Shield program and are looking forward to growing this business relationship."

Ondas Holdings' Airobotics Receives \$2.6 Million Order for Optimus Drone Systems in Dubai, UAE

Ondas Holdings Inc. a leading provider of private industrial wireless networks and commercial drone and automated data solutions, announced that its wholly-owned subsidiary, Airobotics LTD has received a \$2.6 million order for immediate delivery of additional Optimus Systems from a local governmental entity in Dubai for public safety and emergency response operations. Since 2020, the Optimus System has been extensively utilized by this local governmental entity in Dubai which has carried out thousands of operational drone flights without human intervention under challenging environmental conditions in densely populated areas demonstrating urban drone infrastructure for Public Safety and Emergency Response use cases.

"We continue to provide Optimus Systems to this governmental entity as they expand the fleet of installed infrastructure in Dubai," said Eric Brock, Chairman and CEO of Ondas. "The Optimus drone is demonstrating its reliability, having already completed thousands of flights over densely populated areas. The recent receipt of a first of its kind Airworthiness Type Certification from the U.S. Federal Aviation Administration demonstrates the high level of maturity, automation, and aerial capabilities of our Optimus System."

"We are proud to receive an additional order for Optimus Systems from our customer in Dubai," said Meir Kliner, Airobotics' CEO and President of the Ondas Autonomous Systems business unit. "We are working to grow our Optimus deployments in Dubai and fulfill the vision of a fully automated urban drone infrastructure for Public Safety and Emergency Response. Together with Ondas' American Robotics, we are bringing these capabilities to the United States where we can leverage the Optimus drone FAA Type Certificate required to enable similar operations."



Sheremetyevo Airport installed a radar system to detect & suppress UAVs

Sheremetyevo Airport has installed a radar system to detect and suppress UAVs, according to the airport's materials on ensuring comprehensive security.

"In order to ensure a high level of flight safety, a radar-optical complex "ENOT-SD" was installed at Sheremetyevo Airport. The hardware and software complex is designed for automatic detection of low-flying targets (including small-class unmanned vessels), their verification using video images and subsequent counteraction by creating interference," the materials note.

"ENOT-SD" will be used using Kaspersky Lab



software with artificial intelligence. Thanks to this, the system can distinguish and classify objects by type: bird, UAV, aircraft, person or machine. The characteristic allows the use of suppression means

only on UAVs, excluding the impact on aircraft, Sheremetyevo noted. The radar will also be able to "identify, among other things, UAVs flying in radio silence mode, which makes it possible to cover the entire spectrum of the threat model."

"The radiation from the radar station for detecting and determining the coordinates of moving targets will not have an undesirable interference effect on the functioning of ground-based radio technical support for flights and aviation telecommunications located in the area of the Sheremetyevo airfield," the materials note.

Counter-UAS Center of Excellence Enhances Integrated Security Solutions

The proliferation of consumer and military drones, or unmanned aerial systems (UAS), presents challenges across the entire spectrum of our customers. Still, our experts, technology, infrastructure, and partnerships converge at the Counter-UAS Center of Excellence, enabling us to deliver innovative solutions that equip our customers to face these challenges successfully.

Base commanders responsible for security, aviation authorities, utility operators, law enforcement, and others with security and infrastructure responsibilities all confront challenges arising from intentional actors seeking to cause damage or exploit a situation and careless or clueless actors who, although not intending to cause issues, present risks to people and infrastructure. Detecting, tracking, identifying, and mitigating these threats is a constant battle that requires agile solution development and extensive testing and validation, which is why the Center's key location and expanding footprint and capabilities make our team the ideal C-UAS solutions provider.

Key Location : At our Counter-Unmanned Aerial Systems (C-UAS) Center of Excellence, located in Summit Point, West Virginia, innovation begins with the unique location of our facility. One hour from the Washington, D.C. area and beyond national capital region drone flight restrictions, the Center is remote enough to allow for testing and integration of radar and radio frequency (RF) detection and mitigation capabilities. This location enables our team and our partners to integrate and test solutions without the scheduling and logistics challenges associated with using one of the national ranges. By combining the test and integration facilities in a common location, our engineers can rapidly iterate on solutions to some of the unique challenges of C-UAS and present them to customers.

Expanding Footprint to Expand Solutions : There is no "one size fits all" solution to the C-UAS challenges faced by our customers. The combination of different threats and differences in mission, environment, and customer authorities, combined with the rapid evolution of UAS and C-UAS technologies, requires a flexible "system of systems" approach to developing solutions. Expanding the C-UAS Center of Excellence with



a second integration and test range and a Technology Integration Center (TIC) that includes the modeling and simulation capabilities of our Digital Threat, Testing, and Training Environment (DT3E) meets this need.

New Integration and Test Range: The new integration and test range will support both the C-UAS mission and a broader installation and perimeter security mission with the ability to install, integrate, and test a variety of sensors, including ground vibration, tethered drones for aerial surveillance, and specialized cameras for intruder detection. We can also operate Group 1 and Small Group 2 UAS, along with both manned and unmanned ground vehicles and human elements against a variety of C-UAS sensors and effectors including radars, cameras, and RF sensors from both Parsons and current and future strategic vendor partners. The new range will support the integration and testing of novel UAS and UGS sensors being developed by our team for missions including search and rescue, surveillance, perimeter security, and access control.

Technology Integration Center : The TIC includes a state-of-the-art command center and a micro manufacturing and integration lab. The command center will have access to data from sensors on the range and the digital twin simulated sensors from our DT3E capability. The simulated digital environment enables us to model actual installations for planning and CONOPS/TTP development, operator training, and system familiarization in the context of actual deployed environments. In addition, the center's software development and integration capabilities will be used to continue expanding both our sensor integration and advanced multi-modal AI/ML-based object detection, classification, and tracking capabilities. The micro-manufacturing facility will enable us to continue the development and production of specialized UAS and vehicle payloads for our customers.

Epirus Delivers IFPC-HPM Counter-Swarm System to U.S. Army, Developing Pathway to Field High-Power Microwave Capability

Epirus announced the delivery of the first Indirect Fire Protection Capability - High-Power Microwave (IFPC-HPM) system to the U.S. Army. The IFPC-HPM is a Leonidas-derived counter-Unmanned Aerial System (C-UAS)-swarm capability - and this marks the first of four IFPC-HPM prototype systems Epirus will deliver to RCCTO, as part of a December 2022 contract award.

Epirus delivered its HPM weapon after successfully completing a recent U.S. Army-sponsored government acceptance test hosted in Nevada. The testing event further validated the system's safety for personnel and fuel and marked HPM's continued progression from Science and Technology prototype to operational capability.

"In January, we began our work with RCCTO to deliver an operational high-power microwave weapon to the Air Defense community - and, today, we have done so in record time. With our Army associates, the team at Epirus has developed and demonstrated unprecedented HPM capability in just nine months," said Ken Bedingfield, Chief Executive Officer, Epirus. "That is no small feat - and we are honored to play a leading role in developing a pathway towards delivering a deployable counter-swarm capability to the Army."

Following delivery of the initial prototype to RCCTO, the system will undergo further evaluation and testing to develop tactics, techniques, and procedures for future use. Epirus' HPM system has emerged as a leading capability from a crowded industry of kinetic and directed energy solutions to counter individual and swarm UAS. Epirus and RCCTO will continue to collaborate to deliver an additional three prototype weapon systems over the course of the contracting period. The systems will undergo additional developmental testing to achieve technology maturation and enhance the prototypes to protect against a spectrum of UAS threats.



Netline Unveils its Cutting-Edge C-Guard Modular ManPack, Offering Full-Range Protection against IEDs & Drones

Netline Communications Technologies Ltd. - a leading developer and manufacturer of high-end electronic warfare and spectrum dominance systems for defense forces and homeland security agencies - is to reveal the C-Guard Modular ManPack - an advanced modular system designed to deliver comprehensive protection against IED and drone threats, with multiple configurations, tailored to the customer needs and mission requirements.

This pioneering solution is based on the building blocks of Netline's combat-proven C-Guard series. The next-generation modular system addresses the evolving landscape of emerging threats, offering a comprehensive defense against IEDs and drones, all within a compact backpack.

Modular design for mission-specific requirements

The C-Guard Modular ManPack is a pioneering solution that allows the user a high degree of flexibility, thanks to five independent modules that can be easily configured to suit specific mission objectives. This unique new capability enables Netline to tailor a solution to each customer, while maintaining the protection abilities of the battle-proven, market-leading C-Guard family.

The solution is also easily upgradeable to support emerging threats and new frequencies, and maintenance-free for optimal performance.

Yallon Bahat, CEO of Netline, says "As a leading technology-based EW company, we identified the need for a solution that will encapsulate all Netline's defensive technologies and capabilities in a single manpack. This new modular manpack is the next step in the field, and it's the first time we see a modular version of a single operational system, without losing any of the coverage bands required to counter drones as well as IEDs".



Current war zones emphasize the need.

"The war in Ukraine and in Israel has emphasized the need for drone detection and mitigation. We are witnessing the growing use of hostile drones each day, in numerous variations. There is a real need for a comprehensive yet compact solution to protect forces in the field. As a company whose technology stands at the forefront of fighting in the most up-to-date threat arena, we have developed a solution that provides full protection for mission success." Bahat adds.

The high-power C-Guard Modular ManPack offers continuous coverage, with both reactive and active (hybrid) protection. Whilst compact and lightweight, the system is capable of operation under rough environmental conditions and is MIL-STD 810 certified.

Altitude Angel Launch Airspace Security Division: Prism Detect



Altitude Angel, the world's most trusted UTM (Unified Traffic Management) technology provider, has announced it has launched a new division, Prism Detect, which will focus on making its ARROW technology available to customers who require advanced unified situational awareness capabilities for the detection of crewed and uncrewed aircraft.

Altitude Angel's ARROW technology is a critical component in enabling the world's longest drone superhighway and is an innovative array of ground-based, networked sensors 'scanning' the low altitude sky. The system connects to Altitude Angel's global UTM platform, GuardianUTM, which processes the real-time data and then 'fuses' it to create a single-source-point-of-truth - an ultra-high-resolution, real-time, moving map of the low-altitude sky, which includes both drones and crewed aviation.

In its totality, Prism Detect provides managers of sensitive real-estate or critical infrastructure with a comprehensive and real-time view of all airspace users within a significant radius of the towers, which can be temporary, mobile, or fixed installations. Unlike other surveillance/detection solutions, which usually take a 'one size fits all' approach, the Prism Detect offering can be adapted depending on the terrain on which it is deployed with the sensor array scaled or reduced to suit the operator's needs.

Furthermore, because Prism Detect is connected to Altitude Angel's GuardianUTM platform, operators will be



able to differentiate between expected (authorised) and unexpected (unauthorised or 'surprise') aerial visitors, allowing those deploying the platform to be able to make informed decisions with the accurate intelligence before them. It makes the offering incredibly versatile, particularly for sporting events or mass gatherings, or where it's important to be able to establish visibility over wide geographic areas. It also has the advantage of being able to distinguish between friend or potential foe in the vicinity, but also to be able to 'tag' certain drones as 'known' - for example, those supporting the event itself.

Richard Parker, Altitude Angel, CEO and founder, said: "Altitude Angel has, and always will be, focussed on enabling drone operations and providing services for new

airspace users.

"Prism Detect will give those with responsibility for critical infrastructure, sensitive real-estate, or outdoor sport and entertainment venues, unparalleled visibility into the sky above. By providing clear intelligence as to who, or what, is operating in the airspace means appropriate and proportionate decisions can be made swiftly and with confidence.

"Today, facilities worldwide can avail of a variety of often independent sensors, each telling only a single chapter of the story and offer little to no actual intelligence to distinguish between authorised and unauthorised traffic. If the world is to welcome drones, then the world needs Prism Detect to help it make sense of the data."

SKYPIXEL AND DJI CALL FOR ENTRIES IN 9TH ANNUAL PHOTO AND VIDEO CONTEST

DJI and SkyPixel, one of the world's most popular online communities for aerial photography and videography, proudly announce the 9th Annual SkyPixel Photo & Video Contest (www.skypixel.com/contests/2023). Running from November 7, 2023, to February 2, 2024, this year's contest encourages creators to push their creative boundaries, foster breakthroughs, and pioneer new trends in aerial photography and videography. To reflect the value of the creative process, the total prize package is worth over \$168,000.

"The art of visual expression revolves around pushing the boundaries of the mind and nurturing creative thought," said Nan Li, the Photo Director of Southern Weekly. Now, in its 9th year, the SkyPixel Annual Photo & Video Contest continues to be a window to captivating moments captured from the sky. This contest will ignite curiosity, reimagine the art of imagery, and immerse the public into the enchanting world of aerial photography.

A Competition Shaped by You

The SkyPixel Annual Photo & Video Contest is a celebration of the remarkable stories that have shaped the art of image capture. Whether from solid ground or soaring through the skies, these stories embody the creative and daring spirit that defines the field. Over the course of nine years, SkyPixel has embraced its users and strived to shape a contest that authentically reflects the desires and aspirations of the global community. This inclusive approach has drawn in an astounding 260,000 submissions and garnered over a billion views worldwide, making it a platform where exceptional works and photographers receive the recognition they deserve and where more people can appreciate the allure of aerial photography. The growth of the SkyPixel platform is a testament to the joy of creation, the exploration of new trends, and the advancement of aerial photography.

This year's SkyPixel Photo & Video Contest brings exciting changes that promise to elevate the competition. Three new Monthly Competitions have been introduced in addition to the main competition, with each month focusing on a unique category. In November, the focus is Multi-focal length, December spotlights FPV images, and in January will highlight Handheld photography. Submissions to the monthly competitions can also be entered into the main competition, where they can contend for both monthly



and overall awards. Additionally, a new creative category for video creators has been incorporated, providing even more opportunities for participants to showcase their talents.

Industry-Leading Judges

A notable enhancement this year is the impressive panel of judges in the photo and video categories. In photography, there are seasoned experts such as Wen Huang, a World Press Photo judge and Senior Editor, and Anne Farrar, Assistant Photography Chief Editor at National Geographic, Nan Li, the Photo Director of Southern Weekly, and Daniel Kordan, a renowned landscape photographer.

In the video category, the judges include Michael Fitzmaurice, renowned for credits, including "Batman: The Dark Knight," and Xiaoshi Zhao, known for his award-winning work on "Forever Enthralled." Bing Xi, a prominent figure in the Chinese TVC industry, and celebrated filmmaker Brandon Li round out the panel.

Impactful Prizes : In a year filled with excitement, SkyPixel and DJI are proud to present a total of 79 awards with total value of over \$168,000. Winners of the Best Work accolade will go home with an Inspire 3 in the video category and a Hasselblad X2D in the photo category, each of the prizes is worth \$13,600. Additionally, they will be signed as an official SkyPixel Creator and receive a prestigious trophy and an award certificate to honor their achievement. Our array of other prizes includes top-tier offerings such as the DJI Mavic 3 Pro, DJI Air 3, DJI Avata, Osmo Pocket 3, Osmo Action 4, and Osmo Mobile 6, providing even more opportunities for our talented participants expand their creativity.

Details of the SkyPixel 9th Annual Photo & Video Contest

The photo contest consists of four categories:

The Nature Category – A Force of Nature : Embrace the power and beauty of Mother Nature. Share deeply impactful moments of nature that encapsulate its grandeur.

The Architecture Category – Beauty in Design:

Architecture is the marriage of art and innovation. Commemorate these feats of design by showcasing the buildings and structures that inspire creativity.

The Portrait Category – Portrait in the Sky: Portraits have a unique ability to captivate audiences like no other medium. Eternalize a moment and empower your subjects through a portrait that captures their very essence.

The Sports Category – More Than a Game: Capture the exhilarating world of sports, demonstrating the exciting moments and the profound significance your chosen sport holds in people's lives.

Please note: All photos must be shot on a drone, and each image must be at least 3 MB with a resolution of at least 300 dpi. EXIF data should be retained.

The video contest consists of five categories:

The Nature Category – A Force of Nature: Share moments of profound connection with the natural world and capture its breathtaking magnificence.

The City Category – Urban Inspiration: Explore how cities have transformative influence over their inhabitants, molding perspectives and communities.

The Travel Category – Explore Destinations: Take us on an unforgettable journey, channeling scenery, people, and your love for travel into captivating visual stories.

The Sports Category – More Than a Game: Capture the power, speed and beauty of sports and show the competitive spirit of going forward.

Creative – Break the Mold: With no restrictions on subject matter, creators are encouraged to explore novel approaches in terms of creative concepts, narrative styles, and filming techniques.

Please note: All videos submitted must include no less than 30 seconds of shooting with DJI equipment.

Always fly with caution, observe the flight environment, and follow local regulations at all times.

Submission Details

Submission Start Date: November 7, 2023, 12:00 (UTC+8)

Submission End Date: February 2, 2024, 12:00 (UTC+8)

Award Announcement: March 19, 2024, 12:00 (UTC+8)

Interested participants can visit the SkyPixel 9th Annual Photo & Video Contest website for more information on contest rules and guidelines: www.skypixel.com/contests/2023

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