



## UAS and SmallSat Weekly News

### Contents

- 2 Germany's Quantum Systems raises \$32M to develop autonomous drone swarms
- 2 Drone startup resolves world's hottest debate: wave height in surfing
- 3 Textron Systems gets contract to support US Navy's UAS ops
- 3 Hoverfly Technologies Surpasses 300 LiveSky Sales to U.S. Government
- 4 Thales to trial drone detection and ID system at Sydney's airport
- 5 Cambodian farmers mull agricultural drones to boost cassava productivity
- 5 Drone Safety Day is Saturday, June 18
- 6 Drone Response Team taking technology to new heights in Sandusky County
- 7 The RoBird® Flying Robot Defends Airports Against Bird Strikes
- 7 Wisk Aero Signs Agreement to Bring Autonomous Air Taxi Program to Australia
- 8 PLATH, Primoco partnership integrate BVLOS drone flights with military traffic in Germany
- 8 Zipline onboard acoustic detection and avoidance system for autonomous drones
- 9 Drone market estimated to be valued at \$279 billion by 2032
- 9 Shield AI Raises \$165M Series E to accelerate building of the world's best AI pilot
- 10 Video from Ukraine shows night vision drone bombing Russian soldiers
- 10 Denmark develops drone that recharges using power lines
- 11 Amazon to begin free drone delivery service in California
- 12 DARPA looks to leverage laser-equipped tankers to power drones
- 12 Japan's Night Hawks Fly Drone Search and Rescue Missions After Dark in Nishikawa
- 13 Innovative Design Features Boost Electric UAV Flight Times
- 14 New Autonomous Long-Range eVTOL UAV for Commercial Applications
- 15 San Diego drone tech startup raises \$165M to build AI pilot
- 16 Propeller Aero, Quantum-Systems pair in drone surveying, 3D mapping construction sites
- 16 Echodyne gets \$135 million infusion amid spiking demand for anti-drone radar systems
- 17 Joby Receives Part 135 Certificate from FAA Ahead of Schedule
- 18 NASA Mars Helicopter Lives, Notches Remarkable 29th Flight
- 18 Company Tests High-Altitude Airship Over New Mexico Desert
- 19 The New Sub-to-Air Loitering UAS From SpearUAV Launches Underwater
- 20 AeroVironment Awarded \$6.2 Million Puma 3 AE UAS Contract by Marine Corps
- 20 Overair Just Received \$145 Million in Funding for eVTOL Development
- 21 Indoor Robotics Tando Drone: Startup Scores \$15 Million for Building Security Solution



## UAS and SmallSat Weekly News

11June22

### Germany's Quantum Systems raises \$32M to develop autonomous drone swarms

Ishveena Singh - Jun. 9th 2022



Germany-based Quantum Systems, the maker of the popular fixed-wing Trinity and Vector/Scorpion eVTOL drones, has raised **\$32 million** through a mix of equity and debt financing in its Series A funding round.

The round was led by venture capital from Bayern Kapital, which was founded by the Bavarian government in 1995. Several German private investors and European Investment Bank, an [existing investor](#), also participated.

With an incredible flight time of **90 minutes**, the drones made by Quantum Systems serve a variety of use cases both in the defense and security sector as well as for the geospatial industry. They can be used in search and rescue operations after natural disasters like floods or leveraged for applications such as smart farming, volume calculation in open-pit mining, surveying work for large construction sites, real-time situational awareness, tactical mapping, and automated railway inspection. <https://dronedj.com/2022/06/09/quantum-systems/>

### Drone startup resolves world's hottest debate: wave height in surfing

Bruce Crumley - Jun. 9th 2022



Meteorologist Teddy Allen and algorithm expert Milan Curic are the driving force behind [Henet Wave](#), a startup they created using a [sensor packing](#) drone to accurately measure the size of waves their fellow surfers can never, but ever agree on. The pair has attracted other swell riders and geek-inclined

teammates to develop their technique of [deploying a UAV](#) equipped with a high-resolution altimeter and sophisticated GPS monitor over breakers.

The duo formed Henet – from the Egyptian for “pelican” – in 2020 after reading an article about a women’s big wave surfing competition. The piece debated aspects of how winners of competitions were determined with the element of size oddly being less of a factor than riding them all the way to the end.



## UAS and SmallSat Weekly News

"To us the bigger debate should have been the ability to differentiate between a 73-foot wave and a 69-foot wave using subjective methods," the startup's website recalls. To test their drone innovation out, Allen and Curic took it to the current Mecca of [big wave](#) surfing at Portugal's Nazaré last February. Swell sizes varied between 15 or 20 feet and [40 to 50 feet](#) – the giant of the session being a monster they measured as 70.87 feet, exactly.

<https://dronedj.com/2022/06/09/drone-startup-resolves-worlds-hottest-debate-wave-height-in-surfing/>

### Textron Systems gets contract to support US Navy's UAS ops June 9, 2022 Military | News



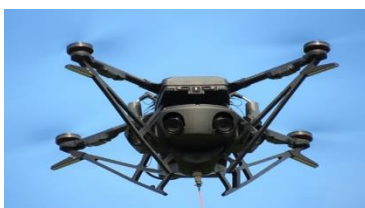
Textron Systems Corporation, a Textron Inc. company, announced today that it has been awarded a contract valued up to **\$18.3 million** including all options by the U.S. Navy's Naval Air Systems Command to provide continued UAS operations support for the USS Hershel "Woody" Williams, designated ESB-4. The one-year base contract includes

two 12-month options and two six-month options, for a total potential performance period of four years.

Under this contract, Textron Systems will continue to deploy its **Aerosonde UAS** to provide maritime operations aboard the ESB-4. It provides multi-payload performance in a single sortie while requiring a minimal shipboard footprint and onboard logistics. Serving multiple U.S. Department of Defense customers with contractor-owned, contractor-operated UAS services alongside military users, the Aerosonde system has amassed more than **550,000 flight hours** with superior availability in some of the world's most austere and challenging environments.

[https://uasweekly.com/2022/06/09/textron-systems-gets-contract-to-support-us-navys-uas-ops/?utm\\_source=rss&utm\\_medium=rss&utm\\_campaign=textron-systems-gets-contract-to-support-us-navys-uas-ops&utm\\_term=2022-06-10](https://uasweekly.com/2022/06/09/textron-systems-gets-contract-to-support-us-navys-uas-ops/?utm_source=rss&utm_medium=rss&utm_campaign=textron-systems-gets-contract-to-support-us-navys-uas-ops&utm_term=2022-06-10)

### Hoverfly Technologies Surpasses 300 LiveSky Sales to U.S. Government June 9, 2022



Hoverfly Technologies Inc. announced today another order for 43 LiveSky systems for the US Army, now surpassing over 300 LiveSky tethered drones sold to the U.S. government. LiveSky is a turnkey tethered UAS platform with infinite flight time, offering



## UAS and SmallSat Weekly News

on-demand persistent ISR capabilities and communications relay solutions.

LiveSky Sentry and LiveSky Defender, often referred to as the Variable Height Antenna for network range extension, have been deployed both domestically and internationally in all-weather environments. LiveSky HL Spectre can carry up to three payloads, offering both persistent ISR and broadband network communications relay solutions.

All LiveSky platforms are payload agnostic, allowing integration of a variety of third-party payloads. USG customers employ Silvus, Trellisware, Persistent Systems, and other tactical radios on LiveSky platforms for broadband network range extension, giving our troops unparalleled situational awareness on the battlefield. Equipping LiveSky with ISR payloads provides live full-motion video streams that can be viewed locally, by operators using Tactical Awareness Kit (TAK), and over networks anywhere in the world. LiveSky does not operate using any radio frequency (RF) signals, making it impossible for the data within the system to be jammed, hacked, or intercepted. [https://uasweekly.com/2022/06/09/hoverfly-technologies-surpasses-300-livesky-sales-to-u-s-government/?utm\\_source=rss&utm\\_medium=rss&utm\\_campaign=hoverfly-technologies-surpasses-300-livesky-sales-to-u-s-government&utm\\_term=2022-06-10](https://uasweekly.com/2022/06/09/hoverfly-technologies-surpasses-300-livesky-sales-to-u-s-government/?utm_source=rss&utm_medium=rss&utm_campaign=hoverfly-technologies-surpasses-300-livesky-sales-to-u-s-government&utm_term=2022-06-10) s

### Thales to trial drone detection and ID system at Sydney's airport Bruce Crumley - Jun. 10th 2022



French transport, defense, and aerospace giant Thales has [been contracted](#) by Airservices Australia to operate a trial run of its drone detection, monitoring, and identification platform at the Sydney Kingsford Smith Airport.

Under the trial, Thales will deploy its [detection and identification](#) platform and serve as tech integrator for Sydney airport's Integrated Drone Surveillance System.

At the heart of the Thales platform is a 3D holographic radar component that will provide a comprehensive picture of airspace surrounding Sydney's airport – and any drones in it – in real time. The Thales platform is designed to detect, track, and classify small, slow, low-flying UAVs – from the smallest remote-piloted craft to more sophisticated autonomous vehicles – and particularly analyze glide paths, where the biggest risks exist.

The company says its solution has been [adopted by airport](#) customers the US, Europe, United Kingdom, South East Asia, and Oceania since 2019. The Thales technology can pinpoint location



## UAS and SmallSat Weekly News

of the UAV's pilot as well. <https://dronedj.com/2022/06/10/thales-to-trial-drone-detection-and-id-system-at-sydneys-airport/>

### Cambodian farmers mull agricultural drones to boost cassava productivity

Ishveena Singh - Jun. 10th 2022



Broadly grown on 600,000 hectares of farmland in the country, cassava cultivation provides employment to thousands of rural workers in Cambodia. But cultivating a crop that can grow higher than one meter, and sometimes even surpass the average height of farmers, is not the easiest thing to do. So now, to meet the growing

demand for cassava-based products such as food, flour, paper, and alcohol, farmers are looking at agricultural drones that bring with them the promise of increased productivity.

Chhay Thi, who owns 20 hectares of land in Varin District, Siem Reap Province of Cambodia, is an early adopter of spray drones. Last month, he used a [XAG agricultural drone](#) for autonomous weeding on his 10-hectare cassava field.

The drone flew over ridges of cassava plants, sprayed precisely along the pre-set route, and finished 8 hectares of herbicide spraying in an hour without any operator intervention. Chhay says the same amount of work would have required more than a week to complete manually. <https://dronedj.com/2022/06/10/cambodia-xag-agricultural-drone/>

12June22

### Drone Safety Day is Saturday, June 18



## Federal Aviation Administration

Drones are fastest growing segment of aviation in the United States. As of January, over 860,000 drones have been registered with the FAA, and over 260,000 Remote Pilots have been certified by the FAA. These

numbers are projected to continue to grow.

The FAA has organized a National Drone Safety Awareness Week each year from 2019 through 2021. This year, we're evolving our approach with ONE Drone Safety Day. Find out how you can [get involved, find events or host a Drone Safety Day event](#).



## UAS and SmallSat Weekly News

The safety message for Drone Safety Day 2022 is Fly RIGHT:

- Register your drone – DroneZone
- Interact with others
- Gain knowledge
- Have a safety plan
- TRUST and Train

[Download the Drone Safety Day Playbook.](#) The playbook gives you an outline of what Drone Safety Day is all about and ideas for how to put together your DSD event.

[https://www.faa.gov/uas/events/drone\\_safety\\_day](https://www.faa.gov/uas/events/drone_safety_day)

### Drone Response Team taking technology to new heights in Sandusky County

Chase Bachman June 10, 2022



FREMONT, Ohio — The drone you see in the skies of Sandusky County may not be just an amateur pilot. It could be [your local sheriff's office](#).

In 2017, The Sandusky County Emergency Management Agency created the "Drone Response Team" with the goal to help in response to any type of emergency; including water rescues, house fires or car crashes. Drones used by the EMA can carry life preservers, first aid kits or rope to drag people to safety.

"Basically putting a drone anywhere that can save a life," Bellevue Police Sgt. Joshua Pickens said. "That's the number one priority. If we can put a drone somewhere that puts someone else in less danger, or help assist to get someone out of danger, is the number one goal. You want drones for good."

The team started off with nine members from different county departments but quickly expanded to work with other municipalities. First responders say other departments outside of Sandusky County are considering using drones too.

<https://www.wtol.com/article/news/local/sandusky-county-emergency-management-drone-response-team/512-e9829556-16f1-4af3-b97d-ba94245a6b83>





## UAS and SmallSat Weekly News

13June22

**The RoBird® Flying Robot Defends Airports Against Bird Strikes** Miriam McNabb June 10, 2022 By: Dawn Zoldi



*It's a Bird! It's a Plane! It's a Bird that's a...Plane! The RoBird flying robot.*

At the Edmonton International Airport and Grand Forks International Airport in North Dakota, a Peregrine falcon soars near the runway to deter birds from interfering with air traffic. It looks real. But it's not. It's a flying robot called the RoBird®.

RoBird has wings that flap. It flies, like a falcon, for five minute high-impact stints. Also like its counterpart in nature, the RoBird can reach speeds of up to 27 miles per hour.

Aerium Analytics, a multi-disciplined drone solutions company based in Calgary, Alberta, produces this novel drone, an ornithopter, that mimics the look and actions of the predatory bird. <https://dronelife.com/2022/06/10/the-robird-flying-robot-defends-airports-against-bird-strikes/>

**Wisk Aero Signs Agreement to Bring Autonomous Air Taxi Program to Australia** Miriam McNabb June 10, 2022 by DRONELIFE Staff Writer Ian M. Crosby



Advanced Air Mobility (AAM) leader [Wisk Aero](#) has formed a partnership with the Council of Mayors South East Queensland to introduce its autonomous air taxi service to the region.

Wisk will also be bringing on locally based personnel to expand its physical presence in Australia.

The Council of Mayors Chair, Brisbane Lord Mayor Cr Adrian Schrinner, stated that the MOU would endorse meeting with the region's Councils pertaining to the introduction of the AAM industry into South East Queensland. <https://dronelife.com/2022/06/10/wisk-aero-signs-agreement-to-bring-autonomous-air-taxi-program-to-australia/>



## UAS and SmallSat Weekly News

### PLATH, Primoco partnership integrate BVLOS drone flights with military traffic in

**Germany** June 8, 2022 Jenny Beechener Civil/military integration



Germany-based PLATH and Czech Republic-based company Primoco UAV have demonstrated a successful Unmanned Aerial Vehicle beyond visual line of sight (BVLOS) flight at Ingolstadt-Manching airport at the same time as regular air traffic in a military airspace of the Bundeswehr in Manching. The flight was made possible with a LIGHT UAS OPERATOR CERTIFICATE (LUC) from Ingolstadt-Manching airport. It was the Primoco One 150's maiden flight with a LUC in German airspace. Equipped with a LUC, there was no further need to obtain an approval from the national civil aviation authority of Germany.

Three flights were successfully performed at the end of April. After ensuring seamless communication and procedures through a test flight in Visual Line of Sight, the air space was opened for all other aircraft. During the following BVLOS flights, several missions were conducted with focus on flight parameters, navigational accuracy, and other aspects.

The fixed-wing Primoco One 150 UAV has a take-off weight of 150 kg and a payload of 30 kg allowing an **operation time of more than 15 hours non-stop in the air**. PLATH's onboard multi-sensor technologies and airborne radio and transponder allowed safe air traffic management and collected all necessary data for the successful mission.

<https://www.unmannedairspace.info/latest-news-and-information/plath-primoco-partnership-integrate-bvlos-drone-flights-with-regular-military-traffic-in-germany/>

### Zipline onboard acoustic detection and avoidance system for autonomous

**drones** June 9, 2022 Jenny Beechener



Drone operator Zipline has introduced a detection and avoidance system based on acoustic technology to support drone operations in complex or uncontrolled airspace. The new system relies on a series of small, lightweight acoustic microphones and onboard processors to navigate airspace and provide 360-degree awareness **with a range up to 2,000 meters**. Using this onboard system, aircraft can autonomously monitor for other aircraft in real-time, and adapt to changes in their flight path.

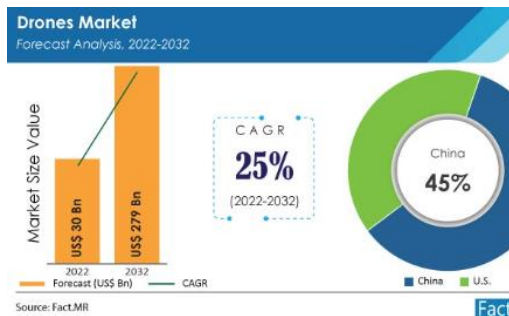




## UAS and SmallSat Weekly News

The hardware is built into Zipline's drones and is ready to be activated for use in many regions upon regulatory approval. <https://www.unmannedairspace.info/latest-news-and-information/zipline-unveils-onboard-acoustic-detection-and-avoidance-system-for-autonomous-drones/>

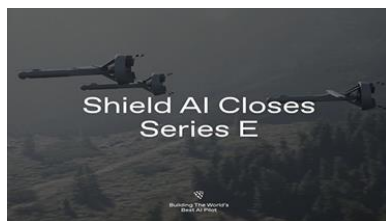
### Drone market estimated to be valued at \$279 billion by 2032 June 9, 2022 Jenny Beechener UAS traffic management news



According to Fact.MR's latest analysis, the drone industry is predicted to develop at a CAGR of 25% between 2022 and 2032, [anticipated to reach \\$279 billion](#). Drone technology aimed at supplying precision-based, guided weapons is causing important advancements in the defense sector and is likely to be the backbone of global market growth, says the report.

From 2017 to 2021, the industry experienced an impressive incline at a CAGR of 23.5%. During the COVID-19 pandemic, prospects dimmed across certain sectors including manufacturing and hospitality, while deployment for general surveillance purposes, especially to check whether individuals adhered to lockdown norms, increased dramatically. <https://www.unmannedairspace.info/latest-news-and-information/drone-market-estimated-to-be-valued-at-usd279-billion-by-2032-fact-mr-report/>

### Shield AI Raises \$165M Series E to accelerate building of the world's best AI pilot June 12, 2022 News



[Shield AI](#), a fast-growing defense technology company building AI pilots for aircraft, today announced it has raised \$90 million in equity and \$75 million in debt as part of a Series E fundraising round, increasing the Company's **valuation to \$2.3 billion**. With this deal, Shield AI joins SpaceX, Palantir, and Anduril as the only multi-billion-dollar defense-tech startups of the past 20 years.

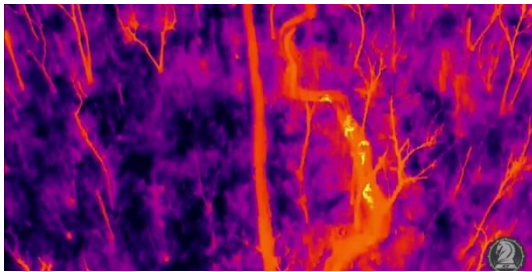
"The future of defense aviation is autonomy. No company has assembled more, or recruits better AI engineering talent for, aviation autonomy and intelligent swarming than Shield AI," said Shield AI's co-founder and CEO, Ryan Tseng.



## UAS and SmallSat Weekly News

The round was led by Snowpoint Ventures' Doug Philippone who has also served as Palantir's Global Defense Lead since 2008, with participation from multiple top-tier venture funds including Riot Ventures, Disruptive, which led Shield AI's Series D, and Homebrew, which led Shield AI's seed round. Previous lead investors include Point72, Andreessen Horowitz, Breyer Capital, and SVB Capital. [https://uasweekly.com/2022/06/12/shield-ai-raises-165m-series-e-to-accelerate-building-of-the-worlds-best-ai-pilot/?utm\\_source=rss&utm\\_medium=rss&utm\\_campaign=shield-ai-raises-165m-series-e-to-accelerate-building-of-the-worlds-best-ai-pilot&utm\\_term=2022-06-13](https://uasweekly.com/2022/06/12/shield-ai-raises-165m-series-e-to-accelerate-building-of-the-worlds-best-ai-pilot/?utm_source=rss&utm_medium=rss&utm_campaign=shield-ai-raises-165m-series-e-to-accelerate-building-of-the-worlds-best-ai-pilot&utm_term=2022-06-13)

### **Video from Ukraine shows night vision drone bombing Russian soldiers** Ishveena Singh - Jun. 13th 2022



The minute-long video was shared on social media by [Valerii Markus](#). One of the most popular military figures in Ukraine, Markus served in the Donbas region from 2014 to 2016 before returning to the front on February 25, 2022. He is also the author of *Footprints on the Road*, a bestseller in the country.

And runs a [YouTube channel](#) chronicling everything from his adventures climbing the tops of the mountains in Nepal to footage taken during the Russian-Ukraine war.

The infrared video, which can be distressing to some viewers, shows a group of soldiers desperately trying to hide and take cover in the trenches as they spot the Ukrainian drone hovering above them. The drone scans the area and locks down two locations with maximum "heat signature" before proceeding to drop bombs there. Markus called the video "Salute to Solitude." <https://dronedj.com/2022/06/13/ukraine-night-vision-drone/#more-82329>

### **Denmark develops drone that recharges using power lines** Bruce Crumley - Jun. 13th 2022



Researchers in Denmark have developed tech that may well prove revolutionary in power grid surveys – and for UAV flight capacity generally: a drone that can tap into the same power lines it is inspecting to [recharge its batteries](#), then continue on with its mission.

The breakthrough by the team at the University of Southern Denmark promises a solution to overcome one of the basic limitations of UAV operation – relatively short battery life – by



## UAS and SmallSat Weekly News

allowing the craft to [replenish its reserves](#) while in flight. But in making self-recharging drones compatible with the high voltage power lines they're designed to inspect, researchers hope to also permit utility companies to use UAVs for other work on electricity-transmitting infrastructure that usually must be taken offline to handle.

The SDU research was undertaken with [Drones4Energy](#), an association of Danish groups looking to develop autonomous, continuous, machine-learning operation of UAV swarms to facilitate and improve work on the nation's 7,000 km electrical grid. In trials, inspection drones whose batteries had gotten low connected themselves directly to nearby power lines [for recharging](#), then continued their work without having to return to their base.

"Now we have shown that we can land on the (power) line and charge directly," SDU researcher Emad Samuel Malki Ebeid told *The Mayor*. "This means that we can let swarms of autonomous drones place sensors and inspect the wires, which today must be disconnected and inspected by humans using lifts and helicopters." <https://dronedj.com/2022/06/13/denmark-develops-drone-that-recharges-using-power-lines/#more-82274>

**Amazon to begin free drone delivery service in California** [Ishveena Singh](#) - Jun. 13th 2022



The company announced today that customers in Lockeford, California, will be among the first in the US to see Amazon drones delivering packages in their backyards. The service is expected to launch sometime "later this year," once Amazon receives the green light from the FAA and the local officials in Lockeford.

We're building something different. We've created a sophisticated and industry-leading sense-and-avoid system that will enable operations without visual observers and allow our drone to operate at greater distances while safely and reliably avoiding other aircraft, people, pets, and obstacles.

Amazon's latest delivery drone, the MK27-2, comes with a unique hexagonal design (*pictured above*) and can carry **five pounds** of payload at speeds up to 50 miles an hour. The drone's sense-and-avoid system is designed to identify both static and moving obstacles. <https://dronedj.com/2022/06/13/amazon-drone-delivery-california/#more-82318>



## UAS and SmallSat Weekly News

14June22

### **DARPA looks to leverage laser-equipped tankers to power drones** Briana Reilly / June 13, 2022



The Defense Advanced Research Projects Agency is seeking to explore the potential of turning existing tankers into so-called "airborne energy wells" that can use laser beams to send power to drones.

Agency officials want industry feedback on the possibility of retrofitting aerial refueling aircraft like the Air Force's KC-46 and KC-135 with "an **underwing power beaming pod**" to wirelessly recharge a fleet of unmanned aerial systems, according to a [request for information published today](#).

The solicitation, which lays out a July 11 deadline for submissions, notes such a solution "should have sufficient power for a 100 [kilowatt] or greater continuous wave laser as well as the thermal control for integrating the laser" onto the tankers.

The notice aims to gauge broader feedback from respondents surrounding industry's confidence in creating and testing such components and subsystems, as well as the associated challenges of adapting equipment and missions to that new capability. <https://insidedefense.com/insider/darpa-looks-leverage-laser-equipped-tankers-power-drones>

### **Japan's Night Hawks Fly Drone Search and Rescue Missions After Dark in Nishikawa** Miriam McNabb June 13, 2022



The Night Hawks search and rescue team has signed an agreement with Nishikawa Town, Yamagata Prefecture Agreement to begin night-time, drone enabled search and rescue services for the town from May through November. The Night Hawks use drone equipped with infrared photography equipment to assist in search and rescue.

Nishikawa Town spreads out at the foot of Mt. Gassan, one of the 100 famous mountains in Japan. Mt. Gassan is covered in forest and is a major tourist attraction because of its magnificent scenery – and as a source of rare mountain vegetables and mushrooms. From



## UAS and SmallSat Weekly News

spring to autumn, both locals and tourists flock to the mountain for foraging, hiking, and other alpine sports.

The Night Hawks search and rescue team will provide a 24-hour service desk to respond to emergency requests by dispatching a fully equipped drone and pilot to coordinate with first responders. The drone pilot will support first responders with **infrared imaging** and by providing **drone lighting** to help with rescue efforts. <https://dronelife.com/2022/06/13/japans-night-hawks-fly-drone-search-and-rescue-missions-after-dark-in-nishikawa/>

### FlightOps signs agreement with DroneUp AJOT Jun 10 2022



FlightOps Ltd., a leading multi-drone operating system (OS) provider, today announced a commercial agreement with DroneUp, a major drone flight services provider.

“Using the FlightOps OS, our customers can fly more missions over longer distances with increased safety and reduced costs,” said FlightOps CEO Shay Levy. “Our technology will enable the vision of drone deliveries as a last-mile solution, with great scale and reduced cost of operation. We anticipate that our software license fees from the delivery segment to exceed \$2 million in 2022 and \$10 million in 2023.”

DroneUp is recognized as a global leader in drone flight services, transforming organizations with drone technology solutions ranging from deliveries and inspections to safety and security.

The FlightOps solution works by installing robotic software onboard any type of drone which converts them into an autonomous “robot-pilot” that communicates to the cloud-based operation center through 5G networks **allowing automated fleet operation in shared airspace**.

The software uses automated mission planning to create flight paths for deliveries to business or residential addresses without the need of manual planning. <https://ajot.com/news/flightops-signs-agreement-with-droneup>

### Innovative Design Features Boost Electric UAV Flight Times Sarah Simpson / 14 Jun 2022

Chinese FlyDragon Drone Tech’s electric FDG30 Mako Shark VTOL has been specially designed for aerial surveying and surveillance applications and can achieve an ultra-long endurance time of up to 6 hours.





## UAS and SmallSat Weekly News



[FlyDragon Drone Tech](#) has detailed the specific design features of the FDG30 Mako Shark that help enable the VTOL UAV to achieve **ultra-long endurance flights of six hours**. Designed for aerial surveying and surveillance applications, the electric UAV combines the launch and landing advantages of a multirotor with the endurance of fixed-wing aircraft.

Notable design features which facilitate the ultra-long endurance of the [FDG30 Mako Shark](#) electric fixed-wing VTOL drone include the placement of the air intake, which is located below the drone facing the airflow, doubling the intake when climbing.

The rear end has been designed to be conducive to the intake of the propellers, thereby increasing the efficiency of the power system; and the landing gear has been constructed using aluminum alloy, making it both lightweight and capable of absorbing energy on impact, and so reducing any damage caused by heavy landings.

[https://www.unmannedsystemstechnology.com/2022/06/electric-uavs-ultra-long-6-hour-endurance-design/?utm\\_source=UST+eBrief&utm\\_campaign=8325e749c5-ust-ebrief\\_2022-jun-14&utm\\_medium=email&utm\\_term=0\\_6fc3c01e8d-8325e749c5-119747501&mc\\_cid=8325e749c5&mc\\_eid=0d642a9d48](https://www.unmannedsystemstechnology.com/2022/06/electric-uavs-ultra-long-6-hour-endurance-design/?utm_source=UST+eBrief&utm_campaign=8325e749c5-ust-ebrief_2022-jun-14&utm_medium=email&utm_term=0_6fc3c01e8d-8325e749c5-119747501&mc_cid=8325e749c5&mc_eid=0d642a9d48)

## New Autonomous Long-Range eVTOL UAV for Commercial Applications Mike Ball / 10 Jun 2022



[FIXAR](#) has introduced the FIXAR 025, an autonomous fully electric unmanned aerial vehicle designed for extended commercial and industrial missions. Carrying up to 22 pounds of payload for distances of up to 186 miles on a single charge, the long-endurance drone is highly suited for BVLOS (beyond visual line of sight) operations.

The versatile platform can be equipped with a wide array of easily swappable payload modules, allowing operators to use the same aircraft for surveying, aerial imaging, remote sensing, surveillance, real-time monitoring and delivery. The UAV is also equipped with a patented payload safety system to secure the sensors and the data backup system.



## UAS and SmallSat Weekly News

Vasily Lukashov, founder and CEO at FIXAR, commented: “With this model, we intend to answer a lasting market call for the increased flight range, payload capacity, and scope for integration. It has a full-body lift design – the entire body of the UAV serves as wing area, eliminating dead weight and increasing flight efficiency and length.”

[https://www.unmannedsystemstechnology.com/2022/06/new-autonomous-long-range-evtol-uav-for-commercial-applications/?utm\\_source=UST+eBrief&utm\\_campaign=8325e749c5-ust-ebrief\\_2022-jun-14&utm\\_medium=email&utm\\_term=0\\_6fc3c01e8d-8325e749c5-119747501&mc\\_cid=8325e749c5&mc\\_eid=0d642a9d48](https://www.unmannedsystemstechnology.com/2022/06/new-autonomous-long-range-evtol-uav-for-commercial-applications/?utm_source=UST+eBrief&utm_campaign=8325e749c5-ust-ebrief_2022-jun-14&utm_medium=email&utm_term=0_6fc3c01e8d-8325e749c5-119747501&mc_cid=8325e749c5&mc_eid=0d642a9d48)

**San Diego drone tech startup raises \$165M to build AI pilot** [Ishveena Singh](#) - Jun. 14th 2022



Shield AI, an artificial intelligence company focusing on drones and other autonomous aircraft, is on a mission to build “the world’s best AI pilot.” To that end, the San Diego startup has raised \$90 million in equity and \$75 million in debt as part of a Series E fundraising round. **The funding values Shield AI at \$2.3 billion.**

The company’s AI pilot is called Hivemind. It enables swarms of drones and aircraft to operate autonomously without GPS, communications, or a pilot. Hivemind enables full autonomy and is designed to run fully on the edge, disconnected from the cloud, in high-threat GPS and communication-degraded environments.

Russia and China are jamming GPS and communications. US and allied forces need swarms of resilient systems flown by AI pilots to operate in these denied environments. We call it low-cost, distributed strategic deterrence. If we had put up a bunch of AI-piloted drone swarms on the border of Ukraine, the Russians may have thought twice about invading.

The Series E round was led by Snowpoint Ventures, with participation from multiple top-tier venture funds including Riot Ventures, Disruptive, which led Shield AI’s Series D, and Homebrew, which led the company’s seed round. <https://dronedj.com/2022/06/14/shieldai-drone-ai-pilot/>



## UAS and SmallSat Weekly News

### Propeller Aero, Quantum-Systems pair in drone surveying, 3D mapping construction sites Bruce Crumley - Jun. 14th 2022



Denver-based Propeller Aero said its Post-Processed Kinematic 3D [mapping solution](#) can now be paired with [Quantum-Systems'](#) Trinity F90+ drone, which is designed to perform large-scale surveying missions of [construction](#), mining, and other earthwork sites. Combining ground-based sensors, specialized

software analytics, and aerial monitoring views, the companies say, will allow contractors to improve survey accuracy, speed progress, and produce visual models that can be shared with all project participants.

Use of Propeller Aero tech and Munich-based [Quantum-Systems](#) drones is said to slash the time required to fully survey large worksites from several days to just hours, and [yield 3D maps](#) for evaluation and [comparison purposes](#).

To use the combined solution, surveyors position Aero Propeller's AeroPoints smart ground control sensors around the worksite and deploy the [Trinity F90+ drone](#) above the area to collect survey data. That is then uploaded to Propeller's cloud-based platform, where it is processed and available for use within 24 hours. <https://dronedj.com/2022/06/14/propeller-aero-quantum-systems-pair-in-drone-surveying-3d-mapping-of-construction-sites/#more-82347>

### Echodyne gets \$135 million infusion amid spiking demand for anti-drone radar systems Bruce Crumley - Jun. 14th 2022



Specialized radar company Echodyne has raised \$135 million in new funding it needs to keep pace with client demand and to continue anti-drone tech development, receiving the largest boost from backers Bill Gates and Scotland's Baillie Gifford Group.

The [Series C infusion](#) comes amid a flurry of recent business successes for Seattle-based Echodyne and its proprietary metamaterial platforms. Unlike traditional radar, its powerful [electronically scanned array](#) technology systems are built into compact, portable units without moving parts that are particularly effective for security uses in detecting and monitoring the [presence of drones](#).



## UAS and SmallSat Weekly News

Echodyne's first-generation EchoGuard radar product can pick up a small commercial drone from about a kilometer and identify larger craft from farther away. Its systems can be used on the ground, land vehicles, or mounted on UAVs.

Echodyne tech is already in use by an array of military, border security, and police customers. In the last six months alone, the company and its products were selected for the US Army's Security Surveillance System program; the Department of Homeland Security, Customs and Border Protection's five-year innovation project; and for integration into Northrop Grumman's advanced defense and security solutions. <https://dronedj.com/2022/06/14/echodyne-gets-135-million-infusion-amid-spiking-demand-for-anti-drone-radar-systems/>

**15June22**

**Joby Receives Part 135 Certificate from FAA Ahead of Schedule** Jessica Reed June 14, 2022



The Federal Aviation Administration has awarded Joby Aviation a Part 135 Air Carrier Certificate, permitting Joby to **begin on-demand commercial operations with air taxis**. Earning the Certificate is necessary for developers of eVTOL (electric vertical take-off and landing) aircraft and uncrewed aircraft systems to begin operations in the U.S. Joby's team expects to begin passenger-carrying operations in **2024**.

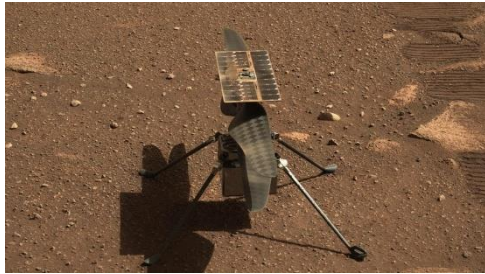
Joby's second pre-production eVTOL prototype has already performed numerous tests—both flight tests and ground-based taxi testing. This prototype was awarded the FAA's [Special Airworthiness Certification](#) and also received airworthiness approval from the U.S. Air Force. And just a few months ago, in March, Joby announced completion of its first [Systems Review and Compliance Review](#) and the FAA's approval, as well as the start of manufacturing its first production-intent aircraft at its facility in Marina, CA. Joby also shared in March that it had begun the [fourth of five stages necessary](#) to receive the Part 135 Certificate. The eVTOL developer initially applied for the certificate in June 2021.

<https://www.aviationtoday.com/2022/06/14/joby-receives-part-135-certificate/>



## UAS and SmallSat Weekly News

### **NASA Mars Helicopter Lives, Notches Remarkable 29th Flight** Amanda Kooser June 14, 2022



The Ingenuity helicopter's first 28 flights on Mars were phenomenal, but its 29th may be one of its most impressive achievements. The wunderkind rotorcraft survived [technical glitches](#), [a dead sensor](#) and brutal winter conditions to lift itself once again into the Martian sky.

[NASA JPL confirmed the successful flight in a tweet](#) Tuesday, saying the chopper completed the 66.6-second journey over the weekend, traveling 587 feet across Mars. Ingenuity's previous flight, No. 28, took place at the end of April.

The flight was planned to reposition Ingenuity so it could stay in contact with its companion, the Perseverance rover. The duo has been working together to explore the Jezero Crater, an ancient lakebed with a history of water. Percy is now checking out an [intriguing river delta area](#) that may hold clues as to whether Mars might have hosted microbial life. <https://www.cnet.com/science/space/nasa-mars-helicopter-lives-notches-remarkable-29th-flight/>

### **Company Tests High-Altitude Airship Over New Mexico Desert** Jun. 14, 2022 By SUSAN MONTOYA BRYAN Associated Press



*This image released by Sceye Inc., shows one of their airships launched from Roswell, N.M., Tuesday, June 14, 2022. Sceye Inc., a technology company that wants to bring broadband to more remote areas and monitor methane and other emissions from the oil and gas industry, launched one of its airships from the New Mexico desert on Tuesday as part of a key test on the way to commercial operations.*

ALBUQUERQUE, N.M. (AP) — A technology company that wants to bring broadband to more remote areas and monitor methane and other emissions from the oil and gas industry launched one of its airships from the New Mexico desert on Tuesday as part of a key test on the way to commercial operations.

Sceye Inc. is developing a high-altitude platform station that company officials hope will provide an option other than satellites and airplanes for boosting internet connectivity and collecting data on everything from industrial pollution to wildfire threats.





## UAS and SmallSat Weekly News

It took a couple of hours for the unmanned helium-filled station to reach the stratosphere. It will maintain its position there for 24 hours, a milestone that will bring Sceye closer to commercial operations over the next 18 to 24 months.

Founder and CEO Mikkel Vestergaard Frandsen said it takes about eight months to build a station, which consists of a sleek reflective fabric designed to operate in the stratosphere at 65,000 feet above the Earth's surface. Capable of lifting heavy payloads, Sceye's airship runs on solar panels and a bank of lithium-sulphur batteries.

The New Mexico Economic Development Department pledged up to **\$5 million** in funding when Sceye announced it would locate in the state. The company has operations in Roswell and Moriarty, a small community near Albuquerque.

<https://hosted.ap.org/article/277485218dccd3b593e0f4aa83a54542/company-tests-high-altitude-airship-over-new-mexico-desert>

## **The New Sub-to-Air Loitering UAS From SpearUAV Launches Underwater** JUNE 14, 2022 INSIDE UNMANNED SYSTEMS



SpearUAV has released the encapsulated Ninox 103 Sub-to-Air loitering UAS, which enables the underwater launch of submarine drones into the air, **a first** according to the company, to provide immediate BVLOS situational awareness.

It's intuitive and easy to operate, providing an effective way for submarines, autonomous underwater vehicles (AUVs) and other underwater platforms to "gain instant aerial capabilities" to support a variety of missions, including joint-force operations, reconnaissance and those of special forces.

The system can be launched instantly, providing real-time imaging beyond the coastline at long ranges, remaining a distance from land and undetected. It is ruggedized for harsh underwater and maritime environments and is payload agnostic. An open architecture enables third-party data link integration.

The solution can be integrated into existing submarine launching infrastructure. Its low visual, thermal and acoustic signatures support stealth-mode operation.



## UAS and SmallSat Weekly News

<https://insideunmannedsystems.com/the-new-ninox-103-sub-to-air-loitering-uas-from-spearuav-launches-underwater/>

16June22

### AeroVironment Awarded \$6.2 Million Puma 3 AE UAS Contract by Marine Corps

June 14, 2022 Military | News



[AeroVironment, Inc.](#) (NASDAQ AVAV) , a global leader in intelligent, multi-domain robotic systems, today announced receipt of a \$6,166,952 firm-fixed-price contract award for [Puma™ 3 AE](#) small unmanned aircraft systems (SUAS) and spares on May 3, 2022, for the U.S. Marine Corps. Delivery is anticipated to be completed in July 2022.

Puma 3 AE has a wingspan of 9.2 feet, weighs 15 pounds and can operate up to 37.2 miles with AeroVironment's [Long-Range Tracking Antenna \(LRTA\)](#). Multi-mission capable, operators can swap Puma 3 AE's payloads quickly, selecting between the [Mantis™ i45](#) and the enhanced night variant, [Mantis i45 N](#). Puma 3 AE is launchable by hand, bungee, rail, or vehicle, and is recoverable by deep-stall landing.

AeroVironment's SUAS comprise **the majority** of all unmanned aircraft in the U.S. Department of Defense inventory, and its rapidly growing international customer base numbers more than 50 allied governments, including Ukraine. [https://uasweekly.com/2022/06/14/aerovironment-awarded-6-2-million-puma-3-ae-uas-contract-by-united-states-marine-corps/?utm\\_source=rss&utm\\_medium=rss&utm\\_campaign=aerovironment-awarded-6-2-million-puma-3-ae-uas-contract-by-united-states-marine-corps&utm\\_term=2022-06-15](https://uasweekly.com/2022/06/14/aerovironment-awarded-6-2-million-puma-3-ae-uas-contract-by-united-states-marine-corps/?utm_source=rss&utm_medium=rss&utm_campaign=aerovironment-awarded-6-2-million-puma-3-ae-uas-contract-by-united-states-marine-corps&utm_term=2022-06-15)

### Overair Just Received \$145 Million in Funding for eVTOL Development

Jessica Reed | June 15, 2022



Overair, the Santa Ana, California-based electric vertical take-off and landing (eVTOL) startup, just announced that it is receiving \$145 million in funding for continued development. The funding comes from the aerospace division of Korean conglomerate Hanwha Systems. Overair plans to fly a prototype, called Butterfly, next year.



## UAS and SmallSat Weekly News

Overair originally began as a spinoff of Karem Aircraft in 2018. Josh Aronoff, Head of Business Development for Overair, explained, “When Uber started populating this concept of urban air mobility using electric VTOL aircraft with batteries that aren’t that great in terms of energy density, the efficient VTOL propulsion IP happened to be a great fit.”

The company has taken the IP surrounding VTOL propulsion that it owns to work towards its objective of operating aerial ridesharing services in densely populated urban areas. The company first revealed the [design of Butterfly last August](#), sharing that the vehicle would employ a vectored thrust configuration to enhance efficiency in flight.

<https://www.aviationtoday.com/2022/06/15/overair-just-received-145-million-funding-evtol-development/>

17June22

### Indoor Robotics Tando Drone: Startup Scores \$15 Million for Building Security

**Solution** Miriam McNabb June 16, 2022 by DRONELIFE Staff Writer Ian M Crosby



The round, led by Pitango and with contributions by Target Global, European Innovation Council Fund, and Spider Capital, will provide Indoor Robotics with the ability to increase product development and enable intelligent indoor security worldwide.

Indoor Robotics’ Tando relies on multiple sensors and proprietary algorithms to accurately map and navigate within an indoor space. While not in flight, Tando **docks on the ceiling**, serving as a security camera. It is currently being deployed in office buildings, warehouses, data centers, malls, and retail establishments by well-known enterprises.

Tando also provides safety and operational improvements with its ability to collect thermal imaging and environmental data, record temperatures of rooms, find leaks and identify areas in buildings that require maintenance. <https://dronelife.com/2022/06/16/indoor-robotics-tando-drone-startup-scores-15-million-for-building-security-solution/>