



UAS and SmallSat Weekly News

Contents

- 2 Boeing Australia completes first flight of second Loyal Wingman UAV
- 2 Aerial Inspection of Automated Shipping Yards
- 3 Dufour Aerospace launches Aero2 – the “Swiss Army Knife” of small, unmanned aircraft
- 4 Dedrone Announces Successful Citywide Airspace Security Deployment
- 4 DRONEBASE RAISES \$20 MILLION TOWARDS RENEWABLE ENERGY
- 5 US military plane grabs drone in mid-air for the first time
- 6 USAF’s First Electric Ultra-Short Takeoff Plane Blows eVTOLs Out of the Water
- 6 U.S. HOUSE OF REPRESENTATIVES PASSES ADVANCED AIR MOBILITY ACT
- 7 In race to provide internet from space, companies ask FCC for 38,000 broadband satellites
- 8 FAA to carry out drone detection tests at business airports in four states for future policy
- 8 UAS Software for Semi-Autonomous Wildlife Survey Operations
- 9 Spectacular DroneBoy FPV video displays fiery flying
- 10 Germany Navy Begins Testing V-200 SKELDAR
- 10 Drone Attack on U.S. Power Grid Failed – This Time
- 11 Lithium-Ion Battery Cells Power Ultra-Long Endurance UAS
- 12 Altitude Angel joins Urban Air Mobility Division of Hyundai Motor Group
- 12 Near Earth Autonomy & L3Harris Deliver Blood to Medics in the Field by Drone
- 13 Hyundai’s new Supernal to lead charge into AAM future
- 14 House passes Advanced Air Mobility Coordination bill
- 15 Drones, viral videos help ‘Nature’ thrive after 40 years
- 15 Lockheed Martin’s SR-72 Could Revolutionize Everything
- 16 Robotic Skies Announces Strategic Funding by Hearst Ventures
- 17 Why drones are becoming Iran’s weapons of choice
- 17 BLUE SUAS NAMES 11 DRONE COMPANIES IN DOD VENDOR PILOT PROGRAM
- 18 Navy Department Tests UAS for Resupply Applications
- 19 Hermeus Unveils, Powers Up Hypersonic Prototype
- 20 The Art and Science of Investing in Unmanned Aviation
- 21 Drone Startup Plans Drug Deliveries to Homes in Salt Lake City

UAS and SmallSat Weekly News

6Nov21

Boeing Australia completes first flight of second Loyal Wingman UAV 05 Nov 2021



Boeing has completed the first flight mission of the second Loyal Wingman uncrewed jet at the Woomera Range Complex in Australia.

[Loyal Wingman](#) is an uncrewed aerial vehicle being developed by Boeing Australia in partnership with the Royal Australian Air Force (RAAF). It is the concept demonstrator of the company's Airpower Teaming System (ATS).

RAAF Head of Air Force Capability air vice-marshal Cath Roberts said: ““This opens up significant capability agility particularly with features such as the reconfigurable nose. We’re heavily engaged in the payload development and the element of surprise that it gives us in the battlespace. You never really know what’s in the nose.””

The company also noted that the first ATS aircraft showcased key characteristics, including the raising and engaging of the landing gear for the first time during the flight. These missions continue to expand the program's flight envelope. <https://www.airforce-technology.com/news/boeing-first-flight-loyal-wingman/>

Aerial Inspection of Automated Shipping Yards 3 Nov 2021 Mike Ball



[Phase One](#) has released a case study showing how its medium format camera has been used as part of a drone-based inspection solution for airborne inspection of **railway-mounted automated storage cranes**, reducing the downtime that would be required by manned ground inspection. The solution combines the DJI M600 Pro drone with the Phase

One Industrial iXM-100 medium format camera. [Read the full case study on Phase One's website](#)

The case study covers:

- How the drone solution achieves a large image width of 7.7 m with a resolution of up to 1 mm
- The advantages of this new method over traditional surveying methods

UAS and SmallSat Weekly News

- How the system adapts the flight path of the drone depending on the current position and velocity of the cranes

To find out more about how Phase One's drone camera solutions can be used for inspection of critical infrastructure in operation, [read the full case study on Phase One's website.](#)

<https://www.unmannedsystemstechnology.com/2021/11/aerial-inspection-of-automated-shipping-yards/>

Dufour Aerospace launches Aero2 – the “Swiss Army Knife” of small, unmanned aircraft

Press 5 November 2021



Zurich, November, 2021 / Swiss-based eVTOL development and production company Dufour Aerospace today launched the Aero2 as its first commercially available product in their tilt-wing eVTOL family. Aero2 is designed as a multi-purpose small, unmanned aircraft with operational flexibility and low operating cost. With a payload of up to 88 lbs, a maximum take-off weight of 330 lbs., and a maximum flight time of **three hours**, it is suitable for a wide variety of customer applications.

With its quickly exchangeable nose cone, it is the perfect tool to carry different customer payloads, be it in logistics, topographical surveys, mappings, measurements or for public safety applications.”

Reactions from observers of the current prototype are encouraging. In a series of prototypes, we will continue to add and certify more features such as the hybrid propulsion module, de-icing capabilities and a usage and health monitoring system. Aero2 offers redundancy in many ways and will therefore meet strict safety requirements. Aero2 is designed to fully comply with EASA's *Special Condition for Light Unmanned Aerial Systems* and is expected to enter serial production in **2023**. <https://www.suasnews.com/2021/11/dufour-aerospace-launches-aero2-the-swiss-army-knife-of-small-unmanned-aircraft/>

UAS and SmallSat Weekly News

Dedrone Announces Successful Citywide Airspace Security Deployment November 3, 2021 Counter UAS



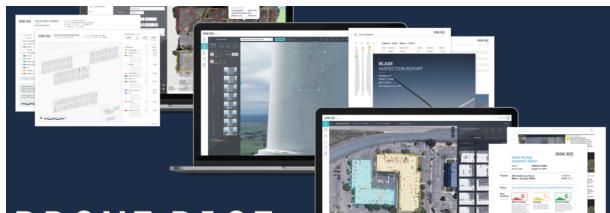
Dedrone successfully implements a citywide airspace security deployment in Southern Europe. Dedrone protects people, property, and information from drone threats across large footprint areas like cities, airports, and power plants.

A major metropolitan city in Southern Europe has deployed less than a dozen Dedrone Sensors to detect, track and locate drones and their pilots across the city center. The protected area includes tourist destinations, corporate and shopping districts, residential areas, and a port encompassing 50 square kilometers.

The high-security stakes for cities to protect civilians and infrastructure against unauthorized drones prompted Dedrone to develop a citywide airspace security solution for urban environments to offer law enforcement and local governments drone protection. This citywide deployment follows short-term installations in European capital cities, including Berlin. Active today, the Dedrone Southern European city installation was launched in November 2020, revealing between **120-200 alerts of unauthorized drone activity per day** and a **60% increase** of unauthorized drone activity **over the last six months**. https://uasweekly.com/2021/11/03/dedrone-announces-successful-citywide-airspace-security-deployment/?utm_source=rss&utm_medium=rss&utm_campaign=dedrone-announces-successful-citywide-airspace-security-deployment&utm_term=2021-11-05

8Nov21

DRONEBASE RAISES \$20 MILLION TOWARDS RENEWABLE ENERGY October 29, 2021 Sally French News



The Santa Monica, Calif. company recently raised another \$20 million in its second funding round of 2021. That comes less than five months after closing \$12.5 million in its **Series C round**. The latest \$20 million round was led by Euclidean Capital, but also drew back in some of DroneBase's previous investors including Union Square Ventures, Upfront Ventures, Energy Transition Ventures and Hearst

UAS and SmallSat Weekly News

Ventures. That brings the total funding raised by DroneBase to nearly **\$60 million**. DroneBase says it will use the funding to continue its expansion efforts primarily in solar and wind energy.

While DroneBase began as a [sort of drone pilot directory](#) (and has since grown to have 80,000 drone pilots in more than 70 countries on its roster), the company has pivoted more so into the enterprise sector, and more specifically renewables. Though, drone pilots on its roster also do more straightforward work like [real estate photography](#), too. But it increasingly seems like [energy is where the money is](#). <https://www.thedronegirl.com/2021/11/08/renewable-energy-efforts-dronebase/>

US military plane grabs drone in mid-air for the first time STACY LIBERATORE FOR DAILYMAIL.COM 5 November 2021



An X-61 Gremlin Air Vehicle (GAV), an unmanned reconnaissance vehicle developed by the Defense Advanced Research Projects Agency (DARPA), has been recovered while in mid-flight for the first time.

During the demonstration held last month, two of the drones performed autonomous formation

flying positions before one GAV was recovered by a C-130 – the other drone was destroyed during flight.

DARAP, which is the research and development agency of the U.S. Department of Defense, conducted another testing with the remaining GAV, which was recovered and flown again in 24 hours.

The demonstration is a major milestone in the U.S. military's work toward using a mothership to deploy swarms of drones over a battlefield.

Lt. Col. Paul Calhoun, program manager for Gremlins in DARPA's Tactical Technology Office, said in a statement: 'This recovery was the **culmination of years of hard work** and demonstrates the feasibility of safe, reliable airborne recovery. See the video.
<https://www.dailymail.co.uk/sciencetech/article-10170353/Military-Gremlin-drone-grabbed-mid-flight-time-DARPA-program.html?ito=1490>



UAS and SmallSat Weekly News

USAF's First Electric Ultra-Short Takeoff Plane Blows eVTOLs Out of the Water 23

Jun 2021, Otilia Drăgan

Electra was just selected by USAF to develop ultra-short takeoff aircraft as part of the Agility Prime program.



There are now more than 200 companies developing aircraft based on electric vertical takeoff and landing technologies (eVTOLs) all over the world. This recent contract with

Electra eSTOL's system is comprised of a small gas turbine and additional

custom components, and it can generate 150 kW (200 HP) of [electrical power](#). Its hybrid-electric turbo-generator powers the 8 electrical motors and charges the battery system during flight – which means there's no need to return to the ground for recharging, and no special infrastructure has to be built.

Unlike traditional airplanes, this one can take off and land in just [100 feet](#), by using distributed [electric propulsion](#) and blown lift. This aerodynamic technique, combined with electric propulsion, allows the plane to take off at a fraction of the power required by eVTOL alternatives, using the same amount of ground space. Basically, it's more effective and sustainable than eVTOLs, with [half of their operating costs](#).

Ground testing for Electra's eSTOL will begin this year, and the demonstrator aircraft is expected to conduct its first flight test in 2022. <https://www.autoevolution.com/news/usafs-first-electric-ultra-short-takeoff-plane-blows-evtols-out-of-the-water-163816.html>

U.S. HOUSE OF REPRESENTATIVES PASSES ADVANCED AIR MOBILITY ACT CHARLES ALCOCK NOVEMBER 6, 2021



Passed by a 383-41 margin, the Advanced Air Mobility Coordination and Leadership Act, H.R.1339, would establish an interagency working group to collaborate on the "safety, infrastructure, physical security, cybersecurity, and federal investment necessary to bolster the AAM ecosystem."



UAS and SmallSat Weekly News

H.R.1339 would have the Secretary of Transportation establish the working group with leaders from other government agencies, including the Departments of Defense, Energy, Homeland Security, and Commerce.

The General Aviation Manufacturers Association (GAMA) hailed the passage as an important advancement to fostering the sector.

GAMA president and CEO Pete Bunce said, “The Advanced Air Mobility Coordination and Leadership Act will ensure that the federal government develops a coordinated approach for promoting this innovative sector of aviation which will facilitate additional transportation options, create jobs and economic activity, advance environmental sustainability and new technologies, and support emergency preparedness and competitiveness.”

GAMA noted that the working group will review issues beyond the initial stage of certification and operations to delve into economic and workforce opportunities, potential physical and digital security risks, and infrastructure development. The group will reach out to stakeholders, labor groups, local officials, consumer groups, and first responders.

<https://www.futureflight.aero/news-article/2021-11-06/us-house-representatives-passes-advanced-air-mobility-act>

In race to provide internet from space, companies ask FCC for 38,000 broadband satellites NOV 5 2021 Michael Sheetz@THESHEETZTWEETZ



A flurry of space companies filed requests with the Federal Communications Commission on Thursday for new or expanded broadband networks, asking the regulator for approval of nearly 38,000 total satellites.

[Amazon](#), [Astra](#), [Boeing](#), Inmarsat, Intelsat, Hughes Network,

OneWeb, SpinLaunch, and Telesat are among those asking the FCC for access to what is known as V-band spectrum, a range of frequency that the companies hope to use to provide global broadband service from space. The FCC's deadline for its latest processing round of proposals to use V-band was Thursday at midnight, driving the influx of applications.

“It’s just a land grab,” Quilty Analytics founder Chris Quilty told CNBC. Quilty’s boutique research and investment firm focused on the satellite communications sector. “The most difficult aspect of building a [low Earth orbit] broadband system is acquiring the spectrum, not building and launching satellites. This is an attempt by every company with any future plans to

UAS and SmallSat Weekly News

stake a claim on beachfront that's currently unclaimed."

<https://www.cnbc.com/2021/11/05/space-companies-ask-fcc-to-approve-38000-broadband-satellites.html>

FAA to carry out drone detection tests at business airports in four states for future policy

November 8, 2021 Jenny Beechener Counter-UAS systems and policies



Atlantic Metropolis Worldwide Airport, NJ, is the latest US airport to test drone detection technology led by the Federal Aviation Administration. The airport invited Hearst TV Nationwide Investigative Unit to observe the tests.

Currently, the FAA does not permit airports to purchase their own detection methods, although it reports an increase in drone sightings around airports. The agency is conducting tests at five business airports at locations in Washington, Ohio, Alabama, and New York over **the next 18 months** under the leadership of Leesa Papier, Director of the FAA's Nationwide Safety Applications and Incident Response unit. <https://www.cnbc.com/2021/11/05/space-companies-ask-fcc-to-approve-38000-broadband-satellites.html>

UAS Software for Semi-Autonomous Wildlife Survey Operations

05 Nov 2021 Phoebe Grinter



[Charles River Analytics](#) has been awarded a \$400,000 follow-on contract from the National Oceanic and Atmospheric Administration to continue development of SOUSAPHONE, a software package that enables Unmanned Aerial Systems (UAS) swarms to safely conduct semi-autonomous wildlife survey operations.

UAS swarms operating as part of a SOUSAPHONE-enabled team use autonomous navigation and image processing algorithms for marine mammal detection and classification. SOUSAPHONE is designed to detect pinnipeds, the group of animals that includes **walruses and seals**.

SOUSAPHONE applies Artificial Intelligence and Machine Learning in computer vision to enable safe, semi-autonomous, Beyond Visual Line Of Sight operations in challenging environments, such as the Alaskan Arctic.



UAS and SmallSat Weekly News

"With SOUSAPHONE, we've applied the autonomous robotic capabilities from our defense AI portfolio to support environmental research," said Daniel Stouch, Director of Space and Airborne Systems in Charles River's Sensing, Perception, and Applied Robotics Division and Principal Investigator for SOUSAPHONE. "We're excited to continue enhancing **our swarm autonomy** capabilities to advance environmental awareness and conservation."

The SOUSAPHONE framework will improve wildlife accessibility and surveying accuracy, reduce risk to humans, and develop autonomy advancements that support wildlife conservation.

<https://www.unmannedsystemstechnology.com/2021/11/uas-software-for-semi-autonomous-wildlife-survey-operations/>

Spectacular DroneBoy FPV video displays fiery flying

Bruce Crumley - Nov. 7th 2021

PT @BDroneDJ



A new FPV one-shot video by self-described "camera-drone services" company DroneBoy Cinema starts with a credibility-testing scene – Canadians being impolite to one another – and gets increasingly unbelievable from there, thanks to some truly astonishing piloting skills.

Whether [the video](#) was intended to be an advertorial display of their incredible flying and videoing skills, or just an excuse to have some exceptionally adventurous FPV fun, the film produced by DroneBoy is an eye-popping success of crack piloting. The company's website describes DroneBoy's wider services as such:

We maintain a large and varied fleet of aerial drones designed for still photo capture, filming, mapping, data collection and inspection missions. We have over 25 active machines, so we always have the right hardware for your mission profile with the appropriate backups on site capable of flying everything from cinema cameras and lenses like the RED or Arri Mini and Sony Venice to LIDAR, FLIR and any other sensor payload you could want. We are now flying [FPV Camera Drones](#) too!

As proof they do – and do it exceptionally well – check out the vid.

<https://dronedj.com/2021/11/07/spectacular-droneboy-fpv-video-displays-fiery-flying/>

UAS and SmallSat Weekly News

9Nov21

Germany Navy Begins Testing V-200 SKELDAR Drone HMID

Lin AVIATION, C4ISP, C4ISR, COMPANIES August 14, 2020



The Deutsche Marine (German navy) began at-sea testing of the SKELDAR V-200 vertical take-off and landing unmanned aerial vehicle, designated the Sea Falcon. The commander of the Marinefliegerkommando (Naval Aviation Command), Thorsten Bobzin, [published](#) photographs on social media showing two Sea Falcon drones being placed aboard the K130 class corvette F260 Braunschweig.

Swiss-based UMS Skeldar, [a joint venture between Swiss UAV and SAAB](#), was contracted in August of 2018 to supply the German navy with a SKELDAR V-200 system.



The goal of the full procurement contract, which was signed by Elektroniksystem- und Logistik (ESG) as the main contractor and UMS Skeldar and Fr. Lürssen Werft, is to supply the German navy with a modern reconnaissance system that is airborne and unmanned, as outlined by Germany's federal military procurement agency.

The Skeldar V-200 is capable of autonomous take-off and landing on an area of 15 square meters (49.2 square feet), and its modular design allows for payloads to be changed rapidly on a per-mission basis, making it ideal for its role aboard the Braunschweig. Among payloads are laser pointers, range finders, electro-optical and infrared 3D mapping sensors, a light cargo hook, and a SIGINT (Signals intelligence) system. It is capable of [five hours of continuous flight](#) while carrying a 40-45 payload. <https://www.overtdefense.com/2020/08/14/germany-navy-begins-testing-v-200-skeldar-drone/>

Drone Attack on U.S. Power Grid Failed – This Time

Miriam McNabb November 08, 2021
Ian M. Crosby



In a recently released Joint Intelligence Bulletin, U.S. officials revealed that a DJI Mavic 2, a small quadcopter drone, was found carrying a copper wire attached to it by nylon cords in what was believed to be an attempted attack on a power substation in Pennsylvania last year. The



UAS and SmallSat Weekly News

report, issued last month, claims this is the **first time** an incident of this kind has been officially assessed as a possible drone attack on energy infrastructure in the United States.

The Bulletin, initially published October 28, 2021, by the Department of Homeland Security, Federal Bureau of Investigation, and the National Counterterrorism Center, dates the attempted attack on July 16, 2020.

"This is the first known instance of a modified UAS likely being used in the United States to specifically target energy infrastructure. We assess that a UAS recovered near an electrical substation was likely intended to disrupt operations by creating a short circuit to cause damage to transformers or distribution lines, based on the design and recovery location."

"To date, no operator has been identified and we are producing this assessment now to expand awareness of this event to federal, state, local, tribal, and territorial law enforcement and security partners who may encounter similarly modified UAS."

<https://dronelife.com/2021/11/08/drone-attack-on-u-s-power-grid-failed-this-time/>

Lithium-Ion Battery Cells Power Ultra-Long Endurance UAS 09 Nov 2021 Phoebe Grinter

Amprius Technologies, Inc. has secured commercial orders with Kraus Hamdani Aerospace for the delivery of 405 Wh/kg battery cells through the end of 2021. The companies have also entered into an agreement to secure additional high-performance battery cells through 2022.



Amprius Technologies Si-Nanowire anode battery cells power Kraus Hamdani Aerospace's K1000ULE

The Amprius cells will be used to power KHA's ultra-long endurance UAS that are used in applications across demanding environments and industries. Its industry agnostic UAS platform has use-cases spanning defense, agriculture, communications, and emergency response. With conventional batteries

offering limited flight time capabilities at a heavier weight, Amprius' cells offer KHA aircraft double the energy in the same volume while also maintaining high power. https://www.unmannedsystemstechnology.com/2021/11/lithium-ion-battery-cells-for-ultra-long-endurance-uas/?utm_source=UST+eBrief&utm_campaign=6b7fc57493-ust-ebrief_2021-nov-

UAS and SmallSat Weekly News

[9_engaged&utm_medium=email&utm_term=0_6fc3c01e8d-6b7fc57493-119747501&mc_cid=6b7fc57493&mc_eid=0d642a9d48](#)

Altitude Angel joins Urban Air Mobility Division of Hyundai Motor Group

November 9, 2021 News



The Urban Air Mobility Division of Hyundai Motor Group has announced [Altitude Angel](#), the world's leading UTM (Unified Traffic Management) technology provider, has joined its Airspace Management Consortium to co-develop and advance the air mobility operating environment.

Hyundai Motor Group launched the Consortium in June to serve as a resource for the wider industry and policymakers in the United States and internationally as they begin to shape common operating and design standards for the advanced air mobility (AAM) industry.

Hyundai Motor Group convenes the consortium quarterly to facilitate sharing of key learning and best practices and to receive strategic insight on its concept of operations (ConOps) for AAM airspace management and ground mobility integration. Looking ahead, the Group will work with the members to simulate the operation of the unmanned traffic management and AAM network and ultimately flight test the Group's ConOps.

[\[https://uasweekly.com/2021/11/09/altitude-angel-joins-urban-air-mobility-division-of-hyundai-motor-groups-airspace-management-consortium/?utm_source=rss&utm_medium=rss&utm_campaign=altitude-angel-joins-urban-air-mobility-division-of-hyundai-motor-groups-airspace-management-consortium&utm_term=2021-11-09\]\(https://uasweekly.com/2021/11/09/altitude-angel-joins-urban-air-mobility-division-of-hyundai-motor-groups-airspace-management-consortium/?utm_source=rss&utm_medium=rss&utm_campaign=altitude-angel-joins-urban-air-mobility-division-of-hyundai-motor-groups-airspace-management-consortium&utm_term=2021-11-09\)](#)

Near Earth Autonomy & L3Harris Deliver Blood to Medics in the Field by Drone

November 9, 2021 News



Near Earth Autonomy and L3Harris Technologies have successfully demonstrated an unmanned aircraft system capable of autonomously delivering life-saving blood and medical supplies **hundreds of miles** from operational bases to medics in the field.

Whole blood is the ideal fluid for hemorrhagic shock treatment in tactical combat care. The U.S. Army's Medical Research and Development Command's Telemedicine and Advanced



UAS and SmallSat Weekly News

Technology Research Center sponsored the demonstration to identify ways to save Warfighters' lives in situations where access to whole blood in the field can be challenging.

Near Earth successfully integrated its autonomous flight systems and L3Harris' hybrid VTOL aircraft to demonstrate multiple delivery scenarios. In one example, the UAS analyzed landing areas using onboard sensors to find a safe, unobstructed location. In other tests, the ground was too cluttered for the vehicle to land, so transport pods were dropped from a low altitude hover or released via parachute. The demonstration took place in Ft. Pickett, VA, in August of 2021.

This research and development initiative was conducted by Near Earth Autonomy and L3Harris and made possible by a contract with the U.S. Army Medical Research & Development Command and the Telemedicine & Advanced Technology Research Center at Fort Detrick, MD.
https://uasweekly.com/2021/11/09/near-earth-autonomy-and-l3harris-demonstrate-drone-system-that-delivers-life-saving-blood-to-medics-in-the-field/?utm_source=rss&utm_medium=rss&utm_campaign=near-earth-autonomy-and-l3harris-demonstrate-drone-system-that-delivers-life-saving-blood-to-medics-in-the-field&utm_term=2021-11-09

10Nov21

Hyundai's new Supernal to lead charge into AAM future Bruce Crumley - Nov. 9th 2021



South Korean transportation giant Hyundai has announced the creation of an advanced air mobility (AAM) company, Supernal LLC. The company will pursue the development of next-generation passenger electric vertical takeoff and landing (eVTOL) vehicles and aims to conduct its first commercial flight in 2028.

Hyundai described the **US-based Supernal** as a spinoff company that will take the lead in developing the conglomerate's first family of eVTOL vehicles. Supernal was initially created as an internal unit of the Urban Air Mobility Division and assigned with working on a concept craft called the S-A1. That is already in advanced stages, with the plane expected to begin the certification process with US regulatory agencies in 2024 as an electric-powered, piloted, or autonomous vehicle flying four to five passengers on urban and suburban routes.

Supernal will also launch the development of a wider range of aerial vehicles whose first commercial flights are slated for in 2028. It will be aiming for large-scale production and



UAS and SmallSat Weekly News

marketing of those in the early 2030s, when Hyundai expects AAM services to begin booming, as it anticipates cautiously firming public acceptance.

Supernal's anointment as a stand-alone unit will place it at the forefront of the 50 different companies [Hyundai created](#) as part of its transformation from an automotive group into a leading player in diversified mobility technologies. Part of Supernal's brief will be to find a way of integrating those AAM vehicles into extant transit networks. <https://dronedj.com/2021/11/09/hyundais-new-supernal-to-lead-charge-into-aam-future/#more-71297>

House passes Advanced Air Mobility Coordination bill Bruce Crumley - Nov. 9th 2021



Lost amid the dramatic push for – and final securing of – passage of President Joe Biden’s \$1 trillion infrastructure draft law last week was the vote approving of another bill designed to have far-reaching consequences for the country: the [Advanced Air Mobility Coordination and Leadership Act](#).

The bill directs the Department of Transportation to establish an Advanced Air Mobility (AAM) interagency working group to plan and coordinate efforts related to the safety, infrastructure, physical security, cybersecurity, and federal investment necessary to bolster the AAM ecosystem in the United States. *Advanced Air Mobility* refers to an air transportation system that moves people and cargo between places using new aircraft designs that are integrated into existing airspace operations as well as operated in local, regional, intraregional, rural, and urban environments.

For readers who tend to frown on government involvement in any aspect of life and business, that will probably come as bad news. But consider it from this perspective: Given the economic and safety stakes in rapidly emerging [future aviation](#) activities, some degree of governmental orchestration and regulation was inevitable. Therefore, it’s arguably better for that planning to begin as soon as possible than be put on a backburner as a (to some) necessary evil whose belated arrival would wind up slowing the entire process down.

<https://dronedj.com/2021/11/09/house-passes-advanced-air-mobility-coordination-bill/#more-71237>

UAS and SmallSat Weekly News

Drones, viral videos help 'Nature' thrive after 40 years BROOKE LEFFERTS November 8, 2021



NEW YORK (AP) — Forty years ago, the programmers at PBS were eager to experiment, so they took a chance and started a new series on animal behavior in the wild called “Nature.” In a recent interview with The Associated Press, Fred Kaufman talked about the evolution of the show, the stories that have made the most impact and how viral videos have helped the genre. AP: How has technology changed the show over 40 years?

KAUFMAN: When HD came it was like, ‘Whoa!’ Suddenly, you saw the detail that you didn’t see before, so that was a big difference. Lenses have gotten better, more diversified. That’s a big difference. **Drones!** Years ago, if you wanted to get an aerial, you had to hire a helicopter at 400 bucks an hour and pay for the fuel and an operator and just pray that you can get everything you want in an hour ... that was like a big deal. Now you put up a drone, one person flies a drone: rocksteady shot. It really allows you to see a landscape, gives you **a new perspective on animals and places....** But I think one of the single most important developments is that wildlife films, behavior, little snippets, have become so viral on social media.

<https://apnews.com/article/climate-technology-science-lifestyle-arts-and-entertainment-6849b9b5f5290d67f5a21dc68324d264>

Lockheed Martin's SR-72 Could Revolutionize Everything November 9, 2021 Mark Episkopos



The legendary [SR-71](#) Blackbird, a fifty-seven-year-old reconnaissance plane that still holds the title of fastest manned airbreathing jet engine aircraft, was retired by the U.S. Air Force in 1998. In the late 2000s, rumors emerged that Lockheed Martin was working on a successor. In 2013, an piece by [Aviation Week's](#) Guy Norris provided fresh insights into Lockheed Martin's ongoing Skunk Works development of a Blackbird successor: the SR-72, or “Son of Blackbird.”

The SR-72 is envisioned as an unmanned, [hypersonic](#), reusable reconnaissance, surveillance, and strike aircraft. Whereas the original Blackbird carried no armaments at all, the SR-72 will reportedly support Lockheed Martin's upcoming High-Speed Strike Weapon. The SR-72's combat capability could be a potent tool for delivering high-precision strikes in threat environments deemed too risky for slower, manned fighters. Capable of traveling at a



UAS and SmallSat Weekly News

staggering top speed of **Mach 6 or 4603 miles per hour**, the SR-72 is roughly twice as fast as the original Blackbird. The new aircraft can also reportedly take off much faster than its notoriously slow-to-start predecessor, potentially a major operational boon in rapid-response scenarios.

<https://nationalinterest.org/blog/buzz/lockheed-martin%E2%80%99s-sr-72-could-revolutionize-everything-195914>

Robotic Skies Announces Strategic Funding by Hearst Ventures November 10, 2021

News



Robotic Skies, Inc, **the first and only global maintenance marketplace** for commercial Unmanned Aircraft Systems and Advanced Air Mobility aircraft, announced today new strategic funding from Hearst Ventures to support continued growth and product development.

Hearst Ventures is the global venture capital division of Hearst, one of the nation's largest diversified media and information companies. Founded in 1995, the group has grown to become one of the most active and successful corporate venture funds with more than \$1 billion invested to date. Notable investments include Pandora, Roku, XM Satellite Radio, SparkCognition, FreightWaves, Via, Drone Racing League, Otonomo, Dronebase, Zendrive, Ridecell, Truepic, Spartan Race and Buzzfeed.

The Robotic Skies business model is shaped by the direction of commercial drone policy and legislation in the United States and of other Civil Aviation Authorities worldwide toward requirements for certified maintenance solutions that ensure safety and ongoing airworthiness of unmanned aircraft.

The company's expansive international network of repair stations has positioned Robotic Skies to respond to the forecast volume of commercial drones and **advanced air mobility aircraft** that will require certified maintenance support. The Robotic Skies field support infrastructure includes over **230** independently owned and operated **FAA Part 145 repair stations**, and their equivalents outside USA, to **serve customers across 50 countries**.

https://uasweekly.com/2021/11/10/robotic-skies-announces-strategic-funding-by-hearst-ventures/?utm_source=rss&utm_medium=rss&utm_campaign=robotic-skies-announces-strategic-funding-by-hearst-ventures&utm_term=2021-11-10

UAS and SmallSat Weekly News

Why drones are becoming Iran's weapons of choice Nov 10th 2021



USING DRONES to assassinate people has long been the preserve of the most advanced armed forces, such as America's and Israel's. But the attempt on November 7th to kill Iraq's prime minister, Mustafa al-Kadhimi, was a dramatic demonstration of how such "precision strike" capabilities are spreading to less advanced countries and even shadowy militias.

Several of Mr Kadhimi's bodyguards were hurt when at least one drone hit his home in the protected "Green Zone" of Baghdad. The prime minister survived and, apparently nursing a wounded wrist, soon appeared on television to denounce the "cowardly" attack.

Suspicion immediately fell on Iran and its proxies for two reasons. The first is that Fatah, the political arm of Shia militias aligned with Iran, is furious at losing most of its seats in Iraq's election last month. The following day, at the funeral of a protester killed by security forces, militia leaders vowed revenge against Mr Kadhimi. "The blood of martyrs will hold you accountable," one said. That night the drone attack took place.

The second reason is that Iran has become the most assiduous provider of drone and other military technology to its proxies and friends, not only in Iraq but also in Yemen, Syria, Lebanon, and the Gaza Strip. Drones are fast becoming Iran's favored weapon of asymmetric warfare, unnerving its enemies, and threatening to change the balance of power in the region.

https://www.economist.com/middle-east-and-africa/why-drones-are-becoming-irans-weapons-of-choice/21806199?utm_campaign=the-economist-today&utm_medium=newsletter&utm_source=salesforce-marketing-cloud&utm_term=2021-11-10&utm_content=article-link-4&etear=nl_today_4

11Nov21

BLUE SUAS NAMES 11 DRONE COMPANIES IN DOD VENDOR PILOT PROGRAM November 8, 2021 Sally French

11 drone companies just got what may be a **competitive edge**, as the Department of Defense selected a handful of companies to join a new pilot program called [Blue sUAS 2.0](#).

With it, the DIU has established agreements with 11 drone companies that are considered "non-traditional vendors" where they'll participate in a pilot program to prototype a **new**



UAS and SmallSat Weekly News

process of approving U.S. military-compliant drones. The newly-announced Blue sUAS 2.0 vendors are:

- Ascent AeroSystems
- BlueHalo LLC
- Easy Aerial Inc.
- FlightWave Aerospace Systems Corporation
- Freefly Systems East
- Harris Aerial
- Inspired Flight Technologies Inc.
- senseFly Inc
- Skydio, Inc.
- Vision Aerial
- Wingtra AG



The program is created under the DoD's Defense Innovation Unit (DIU), alongside the Office of the Under Secretary of Defense for Acquisition & Sustainment and the U.S. Army Corps of Engineers.

These primarily [American drone companies](#) were hand-selected to build "trusted" drone systems for the DoD and other U.S. government partners. Most of the drones they make are ultra-secure, durable or have useful features. For example, the [Skydio X2](#) is also National Defense Authorization Act compliant, thanks to features including signed and encrypted vehicle firmware, an encrypted hard drive, password protection for the controller, and data link encryption. Often, one of the DIU's Blue sUAS solicitation requirements is use of open-source technologies. <https://www.thedronegirl.com/2021/11/11/blue-suas-2/>

Navy Department Tests UAS for Resupply Applications

Nichols Martin November 10, 2021 News, Technology

The Department of Navy has tested and considers implementing [unmanned aircraft systems](#) that deliver supplies as needed in battlefield scenarios.

UAS and SmallSat Weekly News



The U.S. Navy and U.S. Marine Corps might adopt technologies demonstrated on Oct. 27th at Naval Air Warfare Center Aircraft Division's Webster Outlying Field, Naval Air Systems Command said Tuesday.

Air Test and Evaluation Squadron Two Four or UX-24 demonstrated the Tactical Resupply Unmanned Aircraft System (TRUAS) and the Blue Water logistics UAS.

TRUAS is designed to resupply shore-based Marines with tactical equipment and consumables such as food. Blue Water is made to resupply naval troops or Sailors at sea.

Between the two, TRUAS has a heavier lift capacity of 150 pounds and Blue Water has a longer range, but can only carry up to 50 pounds of cargo.

"The demonstration highlighted the basic capability of the systems to operate autonomously, to have mission plans uploaded and to execute the flights with little to no input while they were in the air," said Cmdr. Seth Ervin, chief test pilot at UX-24.

<https://www.executivegov.com/2021/11/navy-department-tests-uas-for-resupply-applications/>

Hermeus Unveils, Powers Up Hypersonic Prototype Chad Trautvetter November 10, 2021



Hermeus, which landed a \$60 million U.S. Air Force contract for the initial development of a hypersonic business jet for presidential travel, last week unveiled a non-flying prototype of its Quarterhorse unmanned small-sized test vehicle. During the by-invitation-only event at its Atlanta headquarters, the company not only unveiled an

integrated airplane with working hardware but also gave a [live demonstration](#) of its engine at maximum afterburner power.

It is a turbine-based combined cycle engine based on the GE J85. An airworthy prototype that will test speeds **between Mach 3 and Mach 5** is expected to begin flight tests next year.

Hermeus COO Skyler Shuford noted that the company designed, manufactured, and integrated the aircraft, "from nothing but an outer shape," in just four months.

UAS and SmallSat Weekly News

Plans call for following with a midsize vehicle that will be used for flight testing for cargo purposes around 2025. It will have longer range and more capable environmental control. They then will proceed with a 20-seat passenger aircraft targeted for FAA certification in **2029**.

<https://www.ainonline.com/aviation-news/business-aviation/2021-11-10/hermeus-unveils-powers-hypersonic-prototype>

The Art and Science of Investing in Unmanned Aviation Juan Plaza NOVEMBER 11, 2021



To find out more about the motivation of investors, we reached out to Daniel Shaposhnikov, partner at [Phystech Ventures](#), a venture capital company focused on finding the most promising tech companies, including unmanned aviation startups.

“We are a group of investors but also engineers and scientists dedicated to the future of non-traditional aviation,” Daniel said. “We started by analyzing the UAM market and preparing a report that is our guide when looking for companies.”

“Investment in cargo drones has a lower risk profile,” Daniel explained. “The certification process for a cargo drone is a lot easier, and the business model is more immediate for real returns. Unicorns can appear in this vertical, and all we need to do is find them and make sure they reach their full potential in a reasonable amount of time.”

“Electric only is not a feasible model with the current status of battery technology,” Daniel said emphatically. “Batteries today can’t supply that amount of power constantly without creating temperature problems. We are a bit skeptical about the energy characteristics that offer purely electric vehicles and understand the advantages of either hybrid or hydrogen fuel cell technology for cargo UAVs.”

“We are investing in companies that develop hydrogen fuel cells, even if they are not necessarily building a drone,” he said. “What we need is a power generating technology that replaces the need for heavy and obsolete batteries while at the same time complies with ‘zero-emissions’ goals while at the same time providing these non-traditional aircraft with long range, heavy payloads, and an acceptable endurance.”

Phystech Ventures has made their report free to the public, and we highly recommend you have a [look](#). It is a fascinating analysis of an industry that is full of both a lot of hype and



UAS and SmallSat Weekly News

promise. https://www.commercialuavnews.com/drone-delivery/the-art-and-science-of-investing-in-unmanned-aviation?utm_source=marketo&utm_medium=email&utm_campaign=newsletter&utm_content=newsletter&mkt_tok=NzU2LUZXSi0wNjEAAAGAr1jzgmywwnl2TljO0yg4CnmYN_xRf5Qldizy_kY2AsHMIlsWsoamKaLMO14kppdGUEPgiAjWPUZk-NzULevJy_uMyAxa_mq7kmQhpL4vAXQ1Eg

12Nov21

Drone Startup Plans Drug Deliveries to Homes in Salt Lake City Ira Boudway

November 11, 2021



California drone startup [Zipline](#), whose fixed-wing drones have been [transporting](#) medical supplies to rural clinics in Rwanda and Ghana since 2016, has signed a service agreement with Utah-based Intermountain Healthcare to make deliveries to its patients in Salt Lake City. Zipline said it expects to make its first deliveries in the spring of 2022 and to reach [hundreds per day within four years](#) of launching the service.

The company will be able to reach about 90 percent of homes in the metro area with its drones which navigate autonomously by satellite and drop payloads of up to four pounds by parachute. Zipline plans to target yards and driveways for drops. It will need approval from the Federal Aviation Administration before it can begin. The company has applied for certification under the FAA's program, known as Part 135, for unmanned package delivery.

Intermountain, a not-for-profit organization founded on a gift from the Church of Jesus Christ of Latter-day Saints in 1975, runs 24 hospitals and 215 medical clinics in Utah, Idaho and Nevada and serves roughly half of Salt Lake City's population of more than 1.25 million. At the outset, the Zipline service will focus on homebound and immunocompromised patients. In later phases, Intermountain plans to use drones to fill routine prescriptions and deliver over-the-counter medications, with patients using online signup to arrange for delivery within a 15-to-30-minute window. "We see this as a long-term relationship," said John Wright, Intermountain's vice president of supply chain and support services.

<https://www.bloomberg.com/news/articles/2021-11-11/zipline-drone-delivery-startup-to-start-operating-in-utah>