



UAS and SmallSat Weekly News

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Brazil's Embraer says subsidiary Eve in deal talks with Zanite SPAC Reuters Staff

JUNE 10, 2021



BRASILIA/SAO PAULO (Reuters) -Brazilian plane maker Embraer SA said its subsidiary Eve Urban Air Mobility Solutions has entered merger talks with Zanite Acquisition Corp, a special purpose acquisition company, according to a securities filing on Thursday. Eve, which is developing aircraft in the electric vertical take-off and landing segment, is one of the **first big bets** from the EmbraerX innovation division.

The Thursday filing was in response to a Bloomberg News report that Eve and Zanite were in talks for a potential **\$2 billion** deal. "This is positive news for Embraer as the Brazilian aircraft manufacturer has a market cap of \$2.5 billion and just Eve Urban Air Mobility alone could reach a market value of \$2 billion," analysts at Bradesco BBI wrote in a note to clients.

Earlier this week, Eve announced a partnership with helicopter company Helisul Aviation to deliver up to 50 eVTOLs starting in 2026, analysts at Guide added.

<https://www.reuters.com/article/us-embraer-eve-zanite/brazils-embraer-says-subsi-dary-eve-in-deal-talks-with-zanite-spac-idUSKCN2DM1L8>

Heavy Lift Tethered Drone Flies for a Week Zenith AeroTech Celebrates 108 Hours of Uninterrupted Flight Miriam McNabb June 10, 2021



Zenith AeroTech has flown its heavy lift tethered drone, the Quad 8 multi-rotor, for more than **108 hours** of continuous flight.

Tethered drones are ideal for persistent surveillance applications, where both flight endurance and the ability to hover in one place are important. With this latest test, Zenith demonstrated just how long "long endurance" can be.

The test, which took place over a seven-day period at the company's facility in Afton, was initiated at the request of a government customer prior to delivery. The Quad 8 TAV, which carried an electro-optical/infrared camera and an Echodyne EchoFlight radar, flew for most of that time, only coming down twice, during lightning storms, which had to be waited out.



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“We observed all the FAA regulations for day and nighttime operation,” Kaya said. “Our team was on site around the clock, with people taking 8-hour shifts to watch the TAV and the Ground Power-Tether Management System. There were two times we had to bring down the Quad 8, but as soon as those storms subsided, the TAV was back in the air. We flew through 18 hours of light to heavy rain with wind gusts up to 40 mph.” <https://dronelife.com/2021/06/10/heavy-lift-tethered-drone-flies-for-a-week-zenith-aerotech-celebrates-108-hours-of-uninterrupted-flight/>

Archer’s flying taxi makes splashy debut in heated market Reuters June 11, 2021

Aerospace & Defense



Brett Adcock and Adam Goldstein (L) co-founders and co-CEOs of flying taxi company Archer Aviation, walk around their invention as they rehearse for the unveiling of their all-electric aircraft from a facility in Hawthorne, California

Archer Aviation unveiled its first electric flying taxi “Maker” in a Tesla-style debut on Thursday as an increasing number of investors and aviation companies pile into the hot but yet-to-be-approved urban air mobility space.

Archer expects Maker's commercial launch in 2024 in Los Angeles and Miami and is in the process of certifying the piloted four-passenger aircraft with the Federal Aviation Administration.

The taxis can fly at 150 miles per hour for distances up to 60 miles at an entry level price between \$3 and \$4 per passenger mile. In New York City for example, the 17-mile trip from John F. Kennedy International Airport to Manhattan would cost \$50 to \$70 and take around five to seven minutes versus 60 to 90 minutes in a car.

While experts estimate the eVTOL market to be worth billions over the next decade, it is not expected to immediately make money, and the timing of regulatory approval remains uncertain. <https://www.reuters.com/business/autos-transportation/archers-flying-taxi-makes-splashy-debut-heated-market-2021-06-11/>



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FAA creates committee to study rules for routine BVLOS operations Bruce Crumley

Jun. 10th 2021



The FAA is creating a new committee to work up rules to allow routine beyond visual line of sight drone operations. The development was announced at the virtual [FAA Unmanned Aircraft System Symposium](#).

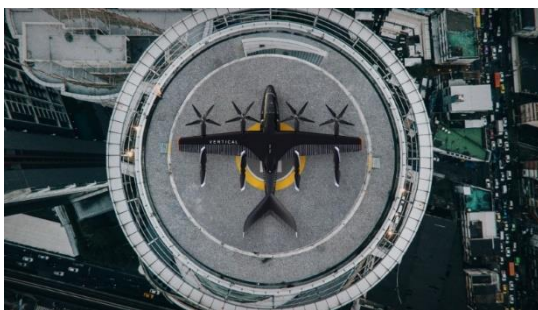
FAA administrator Steve Dickson said the new panel will produce a body of regulation intended to reverse the current state of BVLOS play from a rarity allowed only through a waiver or Part 135 certification to a far more common practice. He said establishing rules to permit businesses to routinely fly BVLOS missions will be vital to unleashing booming drone activity in deliveries and [infrastructure inspections](#) by firms like Wing, Amazon, and American Robotics.

The new regulations framing future BVLOS operation will be situated amid [a pair of other recent](#) FAA drone rule updates. Those involve night flights and navigation above people, and remote ID requirements – all of which came into force April 21.

<https://dronedj.com/2021/06/10/faa-creates-committee-to-study-rules-for-routine-bvlos-operations/#more-60042>

Vertical Aerospace to go public in \$2.2 billion SPAC deal Reuters June 11, 2021

Transactional



Vertical Aerospace, an electric vertical takeoff and landing aircraft (eVTOL) maker backed by investors such as American Airlines ([AAL.O](#)), will go public through a merger with a blank-check firm in a deal valued at \$2.2 billion, the company said on Thursday.

Vertical Aerospace said it has pre-orders for up to **1,000 eVTOL aircraft** with launch customers Avolon and American Airlines, along with a pre-order option from Virgin Atlantic, all valued at up to **\$4 billion**.

Investment in the zero-emission electric aircraft comes at a time when aviation companies are under mounting pressure from investors to help decarbonize the sector and boost their environmental, social and governance scores.



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Analysts say a key question is how long it will take for the new electric aircraft to be certified by aviation authorities. Europe's top regulator said last month the region could see the first flying taxis enter service as early as 2024. (<https://reut.rs/3cyehAh>)

Vertical will be listed on the New York Stock Exchange under the ticker 'EVTL', following a deal with Broadstone Acquisition Corp ([BSN.N](https://www.bsn.n)). American Airlines and Avolon, as well as Honeywell and Rolls-Royce ([RR.L](https://www.rr.l)), have invested in Vertical via a private investment in public equity transaction, the company said. Microsoft's venture fund M12, investment manager 40 North and venture capital firm Rocket Internet SE are also some of Vertical's investors, the company said. <https://www.reuters.com/business/aerospace-defense/american-airlines-invest-electric-aircraft-maker-vertical-aerospace-2021-06-10/>

Greenpeace sends powerful message to G7 leaders, using 300 drones Ishveena

Singh Jun. 11th 2021



As world leaders land in Cornwall, UK, to attend the G7 summit, Greenpeace is leveraging the moment to send them a strong and simple message. And it is using **300 drones** to do so.

The magnificent drone light show conceptualized by Greenpeace UK shows 3D shapes of iconic animals from all corners of the world descending

on Cornwall. The visitors include everyone from the giant blue whale to the tiny, but extremely important, bee.

In the background, you hear children narrate powerful messages of hope. Meanwhile, the video fuses stunning animations and projections alongside a breathtaking drone light show.

In the final moments of the video, as the animals congregate over the cliffs in Cornwall, they make only one demand: "Stop Extinction, Act Now." And these final messages span up to 250 ft in height and 400 ft in length, arguably making them Greenpeace's biggest banners ever. Cool. Let's watch the video. <https://dronedj.com/2021/06/11/greenpeace-drone-light-show-g7/#more-60256>



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USAF Agility Prime partners with Kitty Hawk in first medevac exercise with electric aircraft June 10, 2021 Military | News



[AFWERX Agility Prime](#) and new partner Kitty Hawk reached a milestone in May with their first operational exercise. “This exercise produced important data that will bolster the program going forward,” said Lt. Col. Martin Salinas, the mission design team lead in the [Air Force Operational Test and Evaluation Center](#).

In the program’s first exercise, a diverse group of industry and government operators, engineers, and test professionals assessed the ability to do medical evacuation, personnel recovery, and logistics with Kitty Hawk’s Heaviside eVTOL, aircraft.



Besides assessing different loading scenarios, the team observed demonstrations of remotely piloted and fully autonomous flights with Heaviside.

Founded in 2010 and based in California, Kitty Hawk, has developed numerous eVTOL vehicles including the Heaviside vehicle, named after the English engineer, **Oliver Heaviside**. Designed to be fast, small, quiet and green, the aircraft flies at up to 180 mph with a potential range of 100 miles plus reserves on a single charge. Heaviside takes off and lands in a 30x30-foot space, is 100x quieter than a helicopter and requires less than half the energy per mile of a conventional electric car. https://uasweekly.com/2021/06/10/usaf-agility-prime-partners-with-kitty-hawk-in-first-medevac-exercise-with-electric-aircraft/?utm_source=rss&utm_medium=rss&utm_campaign=usaf-agility-prime-partners-with-kitty-hawk-in-first-medevac-exercise-with-electric-aircraft&utm_term=2021-06-11

European partnership to open cities’ airspace to drones for the first time June 10, 2021 News



The SESAR JU ATM U-space project, AURA, will tackle one of the main hurdles that prevent drones from taking off in cities: their **safe integration** into the very low-level airspace without impacting conventional air traffic operations in controlled airspace.



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This is where AURA comes in, a consortium made by the main air navigation service providers, technology suppliers, and leading research organizations from all over Europe, coordinated by Indra. Together, they aim to integrate the management of the very low-level airspace (VLL) or U-space as it is also known, with traditional air traffic management systems that use air control centers and airport towers. This will unleash the development of a **completely new sector** linked to drones that will boost economy, competitiveness of companies in every sector and improvement of public services. https://uasweekly.com/2021/06/10/european-partnership-to-open-cities-airspace-to-drones-for-the-first-time/?utm_source=rss&utm_medium=rss&utm_campaign=european-partnership-to-open-cities-airspace-to-drones-for-the-first-time&utm_term=2021-06-11

13Jun21

Open Skies Ahead: The Race to Put Commuters in Flying Cars Cade Metz and Erin Griffith June 13, 2021 Jason Henry for The New York Times

“It may look like a strange beast, but it will change the way transportation happens,” said Marcus Leng, the Canadian inventor who designed this aircraft, which he named BlackFly.



Dozens of companies are now building these aircraft, and three recently agreed to go public in deals that value them as high as \$6 billion. For years, people like Mr. Leng have kept their prototypes hidden from the rest of the world — few people have seen them, much less flown in them — but they are now beginning to lift the curtain.

Mr. Leng’s company, Opener, is building a single-person aircraft for use in rural areas — essentially a private flying car for the rich — that could start selling this year. Others are building larger vehicles they hope to deploy as city air taxis as soon as 2024 — an Uber for the skies. Some are designing vehicles that can fly without a pilot.



Opener’s BlackFly during a test flight. Engineers have spent a decade nurturing this new breed of aircraft, electric vehicles that can take off and land without a runway.



A Wisk Aero aircraft in a hangar in a test facility.



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The Joby Aircraft is much bigger than Heaviside, with more space in the cabin and larger rotors along the wings.

Flying cars may reach the market over the next several years. But they will not look or operate like the flying cars in the Jetsons. They will be greener than helicopters and require less maintenance.

They will be quieter, at least a little. And they may eventually be cheaper. One day, they could even fly on their own.

<https://app.nytimes.com/?action=click&contentCollection=todayspaper®ion=rank&module=package&version=highlights&contentPlacement=0&pgtype=collection>

14Jun21

Electra Unveils First Product Configuration Jun 08, 2021 Versatile Hybrid-Electric Aircraft is Clean, Quiet, and Operates Out of a Soccer Field



FALLS CHURCH, Va., June 8, 2021 [Electra.aero](https://www.electra.aero) this week unveiled its first commercial product to serve regional air mobility markets. The aircraft is designed to carry up to seven passengers and a pilot as far as 500 miles while operating out of areas shorter than a soccer field, including rooftops and parking lots. Electra's "blown lift" technology

– where the electric motor-driven propellers blow air over the entire span of the wing and its flaps – allows safe, energy-efficient takeoff and landings at speeds below 30 mph while cruising at 200 mph.

Electra's aircraft has a wingspan of 48 feet and carries up to seven passengers plus a pilot. The aircraft has 8 electric propellers driven by a hybrid-electric powerplant. This allows the plane to operate out of soccer fields, rooftops and parking lots while flying at ranges up to 500 miles. The aircraft is planned to enter commercial service by 2027.

The single-pilot aircraft has eight electric motors powered by a combination of batteries and a small, quiet turbogenerator with no need to rely on special charging infrastructure – **the batteries are recharged mid-air**. Using much less power to lift off than vertical takeoff and landing alternatives, Electra's aircraft provides more room for passengers and cargo, resulting in superior operating economics.

The company is currently building technology demonstrator aircraft that will validate all relevant technologies. Electra's commercial aircraft product is planned to be certified in **2026**



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under Part 23 of the Federal Aviation Regulations. https://www.prnewswire.com/news-releases/electra-unveils-first-product-configuration-301307513.html?tc=eml_cleartime

XTI Aircraft and Xeriant forming a joint company to develop XTI's TriFan 600

[FlightGlobal](#) (6/13) reports that XTI Aircraft and Xeriant “are forming a joint company for the purpose of advancing development of XTI's TriFan 600.” The firms “will each own half of a new corporation called Eco-Aero, which will work toward ‘completing the preliminary design’ of the five-passenger hybrid-electric vertical take-off and landing aircraft.”



XTI Aircraft unveiled its TriFan 600 VTOL in August 2015 with a well-publicized equity crowdfunding (see “Industry Briefs,” [Vertiflite, Nov/Dec 2015](#)). The six-seat fixed-wing airplane holds six people, one pilot and five passengers, and has a cruise speed of 345 mph with a VTOL range of 771.50 miles, or a conventional takeoff and landing range of 1,367 miles. The aircraft has three ducted fans used for VTOL flight and uses two ducted fans for forward flight.

Using three ducted fans, it lifts off vertically, and the two wing fans rotate forward for transition to high-speed flight. <https://evtol.news/xti-aircraft/>

New Virginia spaceport head seeks to increase launch activity Jeff Foust June 13, 2021



WASHINGTON — The new head of Virginia's commercial spaceport on Wallops Island says he wants to increase launch activity at the site, while acknowledging that there are limits as to how big it can grow.

Virginia Gov. Ralph Northam announced June 10 that Roosevelt “Ted” Mercer Jr., a retired Air Force major general, will be the next chief executive of the Virginia Commercial Space Flight Authority, which operates the Mid-Atlantic Regional Spaceport at Wallops Island. Mercer will take over Aug. 1 when the current head of the authority, Dale Nash, retires.

Mercer held a variety of space-related roles in his 32 years in the Air Force, including commanding the 30th Space Wing at Vandenberg Air Force Base and serving as deputy director of operations for Air Force Space Command. Mercer retired from the Air Force in 2008 and, in 2016, became director of the Interagency Program Office for the Federal Aviation Administration's NextGen program to modernize management of the national airspace system. <https://spacenews.com/new-virginia-spaceport-head-seeks-to-increase-launch-activity/>



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Joby Aviation Inks Major Deal to Snag Parking Spots for Urban Air Taxis Jason

Reagan June 11, 2021



Visions of autonomous, passenger drones flitting across futuristic cityscapes are still riding a fine line between reality and sci-fi. However, with companies such as [EHang](#) and [Sikorsky](#) leading the charge, that future may be closer than we think.

Enter [Joby Aviation](#). The California company specializing in all-electric aircraft this week announced a partnership with REEF Technology and Neighborhood Property Group to develop takeoff and landing sites for its developing aerial ridesharing service. As the largest American parking garage operator, REEF is well positioned to provide future air-taxis—manned or unmanned—with urban landing pads.

The partnership will give Joby exclusive access to a number of rooftop skyport sites, focusing at first on Los Angeles, Miami, New York, and San Francisco. Company officials envision a future where parking garages would offer skyports located near popular urban destinations—like convention centers and downtown venues—offering obstruction-free approach and departure paths that minimize noise. <https://dronelife.com/2021/06/11/joby-aviation-inks-major-deal-to-snag-parking-spots-for-urban-air-taxis/>

FAA to form new BVLOS aviation rulemaking committee June 11, 2021 Philip

Butterworth-Hayes Emerging regulations



“I’m pleased to announce the FAA is forming a new Aviation Rulemaking Committee to help the agency develop a regulatory path for routine Beyond Visual Line of Sight operations,” said Steve Dickson, Federal Aviation Administration Administrator at the June 9 FAA symposium. “This committee will consider the safety, security and environmental needs, as well as societal benefits, of these operations. Within six months, the committee will submit a recommendations report to the FAA. I think we can all agree this is a big step forward, and it will help pave the way for routine package delivery, infrastructure inspection, and other more complex drone operations beyond the visual line-of-sight of the remote pilot. We’re also investing in research and partner programs like BEYOND, which will help us create performance-based, technology-agnostic rules.”

There’s a great deal of additional research underway, in part through our government, industry, academic, and international partners. Topics of high interest and ongoing work



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include UTM, and passenger transport capabilities, including Urban Air Mobility.

<https://www.unmannedairspace.info/emerging-regulations/faa-to-form-new-bvlos-aviation-rulemaking-committee-administrator-steve-dickson/>

15Jun21

Drones for Organ Transplants: MissionGO and AlarisPro Transport First Human Pancreas Miriam McNabb June 14, 2021



Game changing technology for a critical mission in healthcare: drones for organ transplants are proving their worth. “[MissionGO](#), a leader in unmanned aircraft solutions; [LifeSource](#), the organ procurement organization serving the upper Midwest; and [Mercy Hospital](#) today announced the **first-ever** test flight carrying a human pancreas via an Unmanned Aircraft System conducted on

May 5,” says a press release.

Following a moment of silence led by Lead Pilot Ryan Henderson to honor the donor hero, this historic flight transported a research pancreas from Mercy Hospital in Coon Rapids MN, flew a 10-mile circuit over the Mississippi River, then returned to Mercy Hospital. This flight successfully demonstrated the viability, value, efficiency gains and delivery speed of lifesaving organs via UAS within the Twin Cities metro area.

For this operation, the pancreas was monitored for the duration of the flight using [MediGO](#)’s hardware and software platform to provide the real-time location status of the organ. LifeSource performed a biopsy on the pancreas before and after the flight “to study the impact of UAS transportation, revealing no changes in pre and post flight biopsies.” Beyond the complexities involved in transporting organs, operators require flight telemetry: “MissionGO’s aircraft was monitored with [AlarisPro](#)’s flight data recorder known as the AlarisAIR which provides flight telemetry data through both cellular and Bluetooth networks.”

<https://dronelife.com/2021/06/14/drones-for-organ-transplants-missiongo-and-alarispro-transport-first-human-pancreas-via-uav/>

FAA UAS Symposium: Perspectives from Capitol Hill on Drone Integration Miriam McNabb June 14, 2021

Last week’s virtual [FAA UAS Symposium](#), a joint event sponsored by AUVSI and the FAA, featured a wide range of speakers from the regulatory and drone communities.



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Rep. Rick Larson, Chair of the House Aviation Sub Committee, explained how law makers approach the complex issues of [drone integration](#) into the NAS. He emphasized that “safe and efficient integration of drones into the U.S. airspace” was a top priority for Congress, commenting that government research predicts that the fleet of small hobbyist drones in the U.S. will grow by more than 1,000,000 units, while the commercial drone fleet will double to more than 800,000. “...The U.S. aerospace economy cannot risk domestic companies going abroad... if the regulatory framework is not in place,” said Larson. Lawmakers and regulatory authorities must move quickly to ensure the regulatory framework in the U.S. supports growth and innovation in the drone industry. <https://dronelife.com/2021/06/14/faa-uas-symposium-rep-rick-larson-and-perspectives-from-capitol-hill-on-drone-integration/>

Avolon and Vertical Aerospace Announce World’s Largest eVTOL Aircraft Order

June 12, 2021 News



Avolon, the international aircraft leasing company, and Vertical Aerospace, the electric vertical take-off and landing company, announce a ground-breaking \$2 billion order for up to **500** electric eVTOL aircraft. This agreement will introduce the ultra-short-haul aircraft category to commercial aviation, a game changing development for zero emissions aircraft.

Avolon will join Microsoft, Rolls-Royce, Honeywell, and American Airlines as equity investors in Vertical, working also with Virgin Atlantic who will be a VA-X4 launch airline customer in Europe. The commitment to the VA-X4 places Avolon at the forefront of technological change and underlines Avolon’s belief in the electrification of air transport. Avolon’s existing young and fuel-efficient fleet will be complemented by an investment in a new category of ultra-short-haul aircraft that will produce zero emissions. https://uasweekly.com/2021/06/12/avolon-and-vertical-aerospace-announce-worlds-largest-evtol-aircraft-order/?utm_source=rss&utm_medium=rss&utm_campaign=avolon-and-vertical-aerospace-announce-worlds-largest-evtol-aircraft-order&utm_term=2021-06-15

GRANDSON OF EARLY DRONE PILOT INVESTS IN DRONEBASE RENEWABLE ENERGY June 12, 2021 Sally French News

DroneBase today announced the close of its Series C funding round, which entails **\$12.5 million** of investment led by [Union Square Ventures](#), with additional funding from [Upfront Ventures](#), [Hearst Ventures](#), and [Valor Equity Partners](#), and [Energy Transition Ventures](#). That



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brings the total funding raised by DroneBase to **\$37.5 million**. And one of those investors has close, personal ties to the drone industry. Neal Dikeman of Energy Transition Ventures is the grandson of Navy Captain Lt Cmdr Ray Woolrich, who is [one of the first drone pilots](#).



DroneBase, which is an aerial data analytics company based in Los Angeles, Calif., will use the funding to expand its work in solar and wind energy. 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. While many drone pilots do more straightforward work like [real estate photography](#), many have experience in enterprise use cases to help companies manage their worksites, properties, and assets at scale.

DroneBase primarily targets Fortune 500 customers to get work, with 2020 being the year that it has largely focused on renewable energy. DroneBase raised \$7.5 million in June 2020 to expand its services to the renewable energy market. With that money, the company launched a new product called [DroneBase Insights for Wind and Solar](#), designed for renewable energy clients to inspect components of wind turbines.

<https://www.thedronegirl.com/2021/06/15/dronebase-renewable-energy/>

Hyundai says it's ahead of schedule on delivering flying cars *Joseph Guzman June 14, 2021*



[Reuters reports](#) Hyundai's chief operating officer on Monday said the company could have urban air mobility vehicles working as air taxis at major U.S. airports as soon as 2025.

[Hyundai showcased the flying-car](#) concept it developed in collaboration with rideshare company Uber in early 2020. The vehicle will be 100 percent electric and will use rotors to cruise at an altitude of 1,000 to 2,000 feet, taking off and landing like a helicopter.

The carmaker envisions the aircraft picking up passengers from urban or suburban locations and flying them to a major airport. Hyundai said the vehicle will be piloted initially but will become autonomous overtime.

[Morgan Stanley predicts](#) the flying car market will reach **\$320 billion by 2030** as automakers such as General Motors, Toyota and others are developing the technology.



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<https://thehill.com/changing-america/sustainability/infrastructure/558380-hyundai-says-its-ahead-of-schedule-on>

Small drone biz Vanilla Unmanned has big plans for the US Navy Megan Eckstein
June 14, 2021



HOLLYWOOD, Md. — When U.S. Pacific Fleet conducted its [first exercise focused on manned-unmanned teaming](#) in April, the Vanilla ultralong-endurance UAV flew overhead, providing persistent video surveillance over the multiday event. It brought with it the intelligence-gathering capability of a drone with the firepower of a warship.

The drone is marketed as being capable of **10 days of flight with 30 pounds** of internally stored payloads, or several days of flight with up to 150 pounds of payload in a multi-mission heavy-lift mode. All this comes at less than \$2 million per system.



The company is already working with military customers, including the Office of Naval Research, U.S. Southern Command and U.S. Special Operations Command. The Navy seems more interested in maximizing endurance, while SOCOM wants to maximize payload capacity. <https://www.defensenews.com/unmanned/2021/06/14/small-drone-biz-vanilla-unmanned-has-big-plans-for-the-us-navy/>

The world's first wooden satellite will launch this year Tereza Pultarova Senior
Writer June 14, 2021



WISA Woodsat, a nanosatellite that measures 4 by 4 by 4 inches and weighs about 2.2 lbs. uses a special type of coated plywood (called WISA) for its surface panels. The wooden satellite will launch as part of a mission, designed by Arctic Astronautics, a Finnish company manufacturing [cubesat](#) kits for students. The aim of the mission is to test the behavior and durability of these plywood panels in the extreme conditions of space and assess its suitability for future missions. The satellite will be outfitted with two cameras, one of which will be attached to a metal selfie stick, allowing the mission team to observe how the satellite's plywood surface changes in the space environment.

"The base material for plywood is birch, and we're using basically just the same as you'd find in a hardware store or to make furniture," said Woodsat chief engineer Samuli Nymann, who is

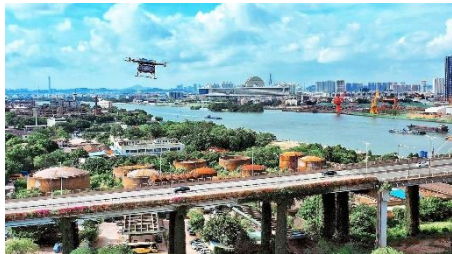


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also the Arctic Astronautics co-founder. "The main difference is that ordinary plywood is too humid for space uses, so we place our wood in a thermal vacuum chamber to dry it out. Then we also perform atomic layer deposition, adding a very thin aluminum oxide layer."

Aluminum oxide, a chemical compound typically used to encapsulate electronics, will help to prevent the wood from releasing any gas in the space environment. It will also protect the surface against the exposure to corrosive [atomic oxygen](#), which can be found at the fringes of the Earth's atmosphere. This type of oxygen, created when strong UV radiation from the sun splits normal oxygen molecules, was first discovered after it damaged the thermal blankets of NASA's early [Space Shuttle](#) missions. <https://www.space.com/first-wooden-satellite-will-launch-in-2021>

As coronavirus cases surge again, China puts drones to work [video] Ishveena Singh
Jun. 15th 2021



The Guangdong province in southern China is witnessing a sudden uptick in COVID-19 cases. And stepping up as first responders for relief and control efforts are drones.

The extremely contagious Indian "Delta" variant of the novel coronavirus was first detected in China on May 21.

Since then, an extraordinary testing blitz has been

launched in the city of Guangzhou, where the mutant strain is known to be spreading quickly. Neighborhoods are under strict lockdown, and service suspensions have been ordered for most businesses.

EHang has been actively involved with epidemic relief and support work since June 4. Its drones – both passenger-grade and logistics models – have been utilizing the emergency air transportation routes across the Pearl River in Guangzhou to undertake multiple contactless epidemic prevention and control tasks in the quarantine and containment zones.

These include aerial logistics, emergency transportation, aerial inspections, and broadcasting. Drones are also transporting the necessary daily household supplies to residents in the quarantine zones. Take a look: <https://dronedj.com/2021/06/15/china-fresh-covid-outbreak-drones-video/>



UAS and SmallSat Weekly News

uAvionix Completes Milestone UAS VTOL Flight Demonstration June 14, 2021 News



uAvionix is proud to announce it has conducted a milestone technology demonstration flight at the [Northern Plains UAS Test Site](#) (NP UAS TS) in Grand Forks, North Dakota. The **40-mile** demonstration flight, witnessed by the NP UAS TS leadership team, combined the Vertical Take-Off and Landing capabilities of the new uAvionix [George autopilot](#) with the latest iteration of [SkyLine](#), uAvionix's C2 infrastructure using three terrestrial [skyStation](#) Ground Radio Systems.

The demonstration featured the custom uAvionix internal test eVTOL platform **autonomously** flown by the George autopilot, [recently announced in April 2021](#). George is a National Defense Authorization Act compliant autopilot leveraging the [Cube](#) core from CubePilot – combining the open-source autopilot with Design Assurance Level C hardware and safety and sensor monitoring for customers seeking Type Certification and safety case evidence for high-risk operations such as Beyond Visual Line of Sight. https://uasweekly.com/2021/06/14/uavionix-completes-milestone-uas-vtol-flight-demonstration-using-uavionix-autopilot-and-c2-network/?utm_source=rss&utm_medium=rss&utm_campaign=uavionix-completes-milestone-uas-vtol-flight-demonstration-using-uavionix-autopilot-and-c2-network&utm_term=2021-06-15

16Jun21

US Army looks for vehicle-launched swarming loitering munition ideas Garrett Reim 14 June 2021



The US Army is interested in launching swarms of loitering munition from light tactical vehicles.

The unmanned air vehicles are to be Group 3 in size or larger. Group 3 UAVs are classified as weighing between 25.4kg (56lb) and 599kg. The UAVs are to be “kinetic”, meaning explosive, and are to be effective against a variety of undisclosed targets. The service wants the weapons to have a range of 5.4nm (10km) to 16.2nm.

The loitering munitions “shall be deployable via a truck – Joint Light tactical Vehicle or High Mobility Multi-Purpose Wheeled Vehicle – or trailer mounted configuration”. https://www.flightglobal.com/military-uavs/us-army-looks-for-vehicle-launched-swarming-loitering-munition-ideas/144150.article?utm_campaign=FG-DEFENCE-FILLER-16062021-JM&utm_medium=email&utm_source=newsletter&utm_content=FG-DEFENCE-FILLER-16062021-JM



UAS and SmallSat Weekly News

Drone Operators: NASA UAS Safety Reporting System is Open, Confidential and Nonpunitive Miriam McNabb June 15, 2021



NASA’s Aviation Safety Reporting System is a voluntary, confidential, non-punitive, reporting system that receives safety reports from pilots, air traffic controllers, dispatchers, cabin crew, maintenance technicians, and now UAS operators,” says NASA. “ASRS has been a part of the aviation safety culture for over 45 years and has

collected and analyzed over 1.7 million safety reports to date. These reports describe unsafe occurrences, hazardous situations, and lessons-learned to help prevent others from making the same mistake.”

This is not the place to report criminal activity or a serious accident, but it is the place to report problems like a “near miss”, or issues that arise from equipment failure, communications loss, environmental hazards, and human error. NASA uses the information to develop best practices for procedures and checklists for safe drone ops and to communicate lessons learned – so that other pilots won’t have to make the same mistake. Additionally, information could be used to “identify equipment, software, and automation issues that can contribute to UAS incidents and resolve these issues to improve safety,” NASA points out.

<https://dronelife.com/2021/06/15/drone-operators-nasa-uas-safety-reporting-system-is-open-confidential-and-nonpunitive/>

SKYEBROWSE LAUNCHES THERMAL MAPPING SOFTWARE FOR AUTEL

DRONES June 14, 2021 Sally French The Drone Girl News



SkyeBrowse, which is the brainchild of multiple state and federal-funded research projects at Rutgers University, is a software that allows its users to map a 3D model of data collect via a drone in one tap. And now, SkyeBrowse software is

compatible with Autel drones.



U.S.-based SkyeBrowse announced this month the launch of a software that enables Autel EVO II drones to create 3D models of an area using thermal imaging. The software is expected to be used in situations such as first response, where genies might be able to recreate accident sites



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or crime scenes quickly and safely at night — a use case they say would save millions of dollars and improve worker safety. It could also be used in situations like wildfire fighting, SWAT raids, detecting pipeline leaks that aren't visible to the human eye, or even identify crops that might be getting too much sun.

SkyeBrowse's software is founded on videogrammetry, where 1 video — rather than hundreds of pictures — is used to create a 3D model. Instead of taking hours to capture the data for a 3D model, SkyeBrowse simplifies it with one video in about 90 seconds. Traditional photogrammetry requires hundreds of photos to be taken over the course of several minutes to an hour. <https://www.thedronegirl.com/2021/06/16/skyebrowse-thermal-mapping-autel/>

Drone-Based Postal Delivery Tested in Slovenia 14 Jun 2021 Mike Ball



Slovenia's national postal agency, Pošta Slovenija, has tested drone delivery for the first time, using an unmanned aerial vehicle developed by [ElevonX](#) and operated by UAS service provider OneDrone.

During the test, a parcel was successfully delivered up to the Vršič mountain pass. Currently, due to regulations in Slovenia that prohibit beyond visual line of sight drone operations, mass uptake of the technology is not yet possible. Pošta Slovenija aims to be actively involved in the process of drafting regulations governing the flight and management of drones in the country, unlocking more cases for drone delivery.

Officials from Pošta Slovenija have said that the main advantages of using drones include reducing pollution, optimizing logistics routes, and the fast delivery of essential goods and materials to remote areas such as mountain settlements. Watch a video about the test flight: <https://www.unmannedsystemstechnology.com/2021/06/drone-based-postal-delivery-tested-in-slovenia/>

17Jun21

BVLOS Flight in Canada: Volatus Granted SFOC to Fly Across the Country Miriam

McNabb June 16, 2021

[Volatus Aerospace](#) has been granted a Special Flight Operating Certificate to perform BVLOS flight in Canada. Transport Canada has approved Volatus BVLOS ops in six locations across Canada.



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Transport Canada is [rapidly developing drone regulations](#), and long distance operations beyond visual line of sight have significant value to many industries in Canada. BVLOS flight has been tested in [operations over oil pipelines](#) and in other less-populated areas.

As Volatus points out, “Flying a drone BVLOS is the next major step in enabling a robust commercial ecosystem for disruptive drone technologies. Indeed, the world is anxiously awaiting the day a drone delivers its Amazon box or pizza, but flight beyond visual line of sight is much more than that.”

“Drones are enhancing our everyday lives in countless ways by reducing human risk in hazardous situations, enhancing the collection of data in an environmentally and cost-effective manner; performing search & rescue activity; conducting security and surveillance operations, and providing highly accurate and timely actionable intelligence to manage our buildings, infrastructure, environment, and wildlife.” BVLOS flight in Canada sets the stage for future developments in passenger drones and large cargo aircraft.

<https://dronelife.com/2021/06/16/bvlos-flight-in-canada-volatus-granted-sfoc-to-fly-across-the-country/>

Walmart Invests in DroneUp, the Nationwide On-Demand Drone Delivery

Provider June 17, 2021 John Furner, CEO and President, Walmart U.S.



Last year, we partnered with [DroneUp](#), a nationwide drone services provider, to launch trial deliveries of at-home COVID-19 self-collection kits. The trial demonstrated we could offer customers delivery in minutes versus hours. Now, after safely completing hundreds of drone deliveries from Walmart stores, we’re making an investment in DroneUp to continue our work toward **developing a scalable last-mile delivery solution.**

DroneUp operates an on-demand drone delivery network that matches their database of more than 10,000 FAA certified pilots to missions nationwide. Since partnering with DroneUp last year, we’ve valued their technological expertise, world-class operations and experienced management team – and their commitment to helping the FAA ensure the highest levels of safety with every delivery. As a well-respected industry innovator, DroneUp was the **first** operator to use the FAA 107.39 waiver, an operation that allows for delivery flights to be conducted over people and moving vehicles. DroneUp operates commercially throughout the



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U.S. and is an authorized government drone services provider for 11 U.S. states serving public sector organizations.

Walmart already has a significant part of the infrastructure in place – 4,700 stores stocked with more than 100,000 of the most-purchased items, located within 10 miles of 90% of the U.S. population. This makes us uniquely positioned to execute drone deliveries, which is why our investment in DroneUp won't just apply to the skies but also the ground. In the coming months we'll be beginning our **first operation at a store in Bentonville, Arkansas.**

<https://corporate.walmart.com/newsroom/2021/06/17/walmart-invests-in-droneup-the-nationwide-on-demand-drone-delivery-provider>

18Jun21

DCL Soars into 2021 Drone Racing Season with Hybrid Matches Jason Reagan June 16, 2021



The [Drone Champions League](#) today announced the launch of its 2021 season with a hybrid of virtual and in-person racing. Offering break-neck speeds of up to 99 mph, the races will span seven venues around the world and kickstart the DCL's [Women's Cup](#).

The World Championship is off and running (well, flying) on June 20 with a match set in the virtual venue of "Proptown, USA." In July, racers will zoom through virtual castle landscapes depicting Reutte, Austria, followed by an online race at the Great (Virtual) Wall of China. In September, the virtual flying continues in "Olibando, USA" followed by races in Laax, Switzerland and China.

Racing teams will finally meet in Mexico City in November to duel for the championship crown. All races will be streamed live on Twitch and IQIYI. <https://dronelife.com/2021/06/16/dcl-soars-into-2021-drone-racing-season-with-hybrid-matches/>

THERE'S A NEW BVLOS AVIATION RULEMAKING COMMITTEE — HERE'S WHO IS ON IT June 12, 2021 Sally French News



There's a new Federal Aviation Administration committee out there. The FAA in June announced its new BVLOS Aviation Rulemaking Committee (ARC) as part of its [6th annual FAA Unmanned Aircraft System \(UAS\) Symposium](#), which was held in June 2021.

Robert Rea | Axcel Innovation | Charlottesville and Portsmouth, VA
robert.rea@axcel.us | 757-309-5869 | www.axcelinnovation.net



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The committee was created to help the FAA develop a regulatory path for routine Beyond Visual Line of Sight operations. The committee has been tasked with providing recommendations to the FAA for performance-based regulatory requirements to normalize safe, scalable, economically viable, and environmentally friendly drone flights.

Over the next six months, the committee is set to submit a recommendations report to the FAA.

There are **90** organizations proposed to be members of the BVLOS Aviation Rulemaking Committee, which is co-chaired by Jay Merkle, who is Executive Director of the FAA UAS Integration Office, alongside Eileen Lockhart of Xcel Energy and Sean Cassidy of Amazon Prime Air. You can [view the full list of proposed member organizations here](#), but standouts include the ACLU and EFF representing the privacy aspect. Then there's ASTM International, which has been working to develop standards related to aspects of drones including [Remote ID](#), [drone parachutes](#) and more. Private tech companies working to improve technology and network infrastructure interests include [Aloft \(formerly Kittyhawk\)](#), [AirMap](#), [ANRA](#) and [Iris Automation](#). And on the drone delivery side, major tech companies involved include [Amazon Prime Air](#) and [Wing](#), the sister company of Google.

BVLOS flights are especially important to study. Most drone use cases that come to mind, such as drone delivery, would not be possible unless drones could fly outside of the operator's line of sight — which is currently [not permitted by the FAA without a BVLOS waiver](#). Right now, BVLOS waivers are incredibly tough to get.

But thanks in part to work the BVLOS Aviation Rulemaking Committee could do, waivers might not even be needed in the future. The committee has a charter expiration date of Feb. 8, 2024. <https://www.thedronegirl.com/2021/06/18/faa-bvlos-aviation-rulemaking-committee/>