



## UAS and SmallSat Weekly News

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5Jun21

**Kelekona proposes colossal 40-seater mass transport eVTOL aircraft** Loz Blain May 27, 2021



This audacious New York City startup is thinking in terms of 40 passengers plus a pilot per flight – or an enormous 10,000 lb of cargo. And apparently long distances and high speeds, too, since the Kelekona website promises these VTOL sky buses will make the 330-mile run between LA and San Francisco in just one hour.

The airframe is certainly an interesting design. It'll rise off the ground in VTOL operations using four banks of two large, ducted fans with variable pitch blades. It's got a chunky, flat, wide body with a mild teardrop shape to its side profile. The front is rounded, the rear end tapered. The bottom looks flat, and the top is slightly domed to turn the whole blobby thing into a lifting surface.



The look is bizarre and a little blimpy, and we're fascinated to learn how the aerodynamics will work out. Surely it'll have to be moving pretty damn fast to support itself in the sky carrying 40 people and the kind of colossal battery bank you'll need for inter-city flights.

Charging those puppies will be no trivial matter, either; we must be talking about several megawatt-hours' worth of high-density lithium batteries here. Thus Kelekona is planning to make the entire battery pack swappable, rolling the whole underfloor of the aircraft out to be slow-charged while the big sky bus moves on to its next destination. <https://newatlas.com/aircraft/kelekona-blended-wing-evtol-bus/>

**Drone video shows sinister sinkhole spread in New Mexico** Scott Simmie Jun. 4, 2021

Normally, we wouldn't ascribe a word like "sinister" to an inanimate object, but a sinkhole in New Mexico seems to have an unpredictable mind of its own. It just keeps on growing.

Round and round and round it grows, where it stops – nobody knows. That kind of sums up the story of a sinkhole in Santa Maria Zacatepec, New Mexico. It started out small, appearing last Saturday with a diameter of about five meters (roughly 16 feet). And now? Well, it has grown to 70 meters in diameter (about 230 feet). And it's not stopping.

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NOW THAT'S A SINKHOLE



Sinkholes, in general, are caused by changes in water levels underground. Changing levels of groundwater, rapid changes in precipitation, and even the freezing and thawing of the ground can all lead to the appearance of sinkholes. (There are other water-related causes, too; if you want to geek out on this, we recommend [this page](#).)

People are, wisely, staying well clear of the growing monster. You can see that caution tape has been put up to prevent the curious from sliding in along with the next chunk of earth.

We love drone videos. And the aerial perspective on this is precisely what's needed to appreciate its scale. This one comes to us via Cheddar News on Twitter:

<https://dronedj.com/2021/06/04/spreading-new-mexico-sinkhole-captured-with-drone-video/#more-59600>

## New drone videos show Great Green Wall of China and Africa Ishveena Singh Jun. 4th 2021



The Great Wall of China may be one of the most popular tourist attractions in the world, but did you know China has been building a Great Green Wall also since the past few decades? And so is Africa?

Officially known as the Three-North Shelter Forest Program, the ambitious project started in 1978. Its aim? To hold back the growing Gobi Desert by planting millions of trees. When the program nears completion around 2050, its human-planted windbreaking forest strips are expected to measure 2,800 miles in length.

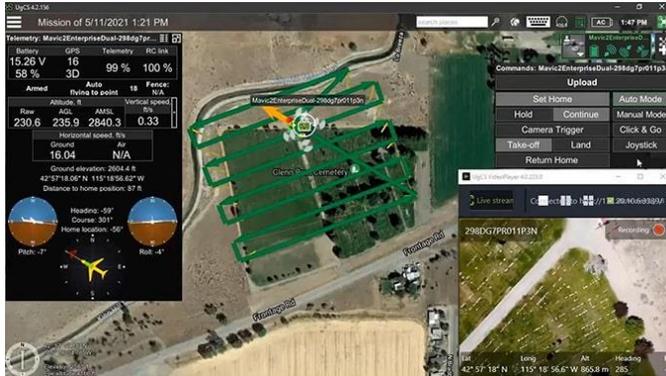
China is now making an outsized contribution to the [greening of the planet](#), according to NASA. From having a forest cover of only 10% in 1949, forests now cover 23% of the total area of land in China. And just this year, China's leadership has committed to increasing that 23% to 24% by 2025. It equates to an area of land larger than South Korea, and China plans to make it green within the next four years!



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And now, here's the video we promised: <https://dronedj.com/2021/06/04/drone-great-green-wall-china-africa/#more-59503>

### Aspiring Drone Pilots Can Now Train Remotely at Embry-Riddle June 4, 2021 News



Embry-Riddle Aeronautical University's Worldwide Campus recently received a first-of-its-kind waiver from the Federal Aviation Administration that will allow students to remotely pilot unmanned aerial systems through online video platforms like Zoom.

"This is a big deal," said Dr. David Thirtyacre, College of Aeronautics

assistant professor and Department of Flight chair. "We've worked closely with the FAA on this project for two years and now have the ability to let students fly complex drones, that are not at their location, **from anywhere in the United States.**" Allowing what is known as remote-split operations, it is the first of its type to be granted to a civilian organization.

Dr. Joseph Cerreta, associate professor of Aeronautical Science who submitted the waiver request to the FAA, said RSO is especially important for Worldwide Campus students who may not be able fly drones where they live. It also allows students to fly sophisticated aircraft with complex equipment, such as multispectral sensors and thermal cameras, to which they might not otherwise have access. [https://uasweekly.com/2021/06/04/aspiring-drone-pilots-can-now-train-remotely-at-embry-riddle-2/?utm\\_source=rss&utm\\_medium=rss&utm\\_campaign=aspiring-drone-pilots-can-now-train-remotely-at-embry-riddle-2&utm\\_term=2021-06-04](https://uasweekly.com/2021/06/04/aspiring-drone-pilots-can-now-train-remotely-at-embry-riddle-2/?utm_source=rss&utm_medium=rss&utm_campaign=aspiring-drone-pilots-can-now-train-remotely-at-embry-riddle-2&utm_term=2021-06-04)

6Jun21

### ***A.I. Drone May Have Acted on Its Own in Attacking Fighters, U.N. Says*** Maria Cramer June 4, 2021

A military drone that attacked soldiers during a battle in Libya's civil war last year may have done so without human control, [according to a recent report](#) commissioned by the United Nations.



The drone, which the report described as "a lethal autonomous weapons systems," was powered by artificial intelligence and used



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by forces backed by the government based in Tripoli, the capital, against enemy militia fighters as they ran away from rocket attacks.

The fighters “were hunted down and remotely engaged by the unmanned combat aerial vehicles or the lethal autonomous weapons systems,” according to the report, which did not say whether there were any casualties or injuries. The weapons systems, it said, “were programmed to attack targets without requiring data connectivity between the operator and the munition: in effect a true ‘fire, forget and find’ capability.” The drone, [a Kargu-2](https://www.nytimes.com/2021/06/03/world/africa/libya-drone.html), was used as soldiers tried to flee, the report said. <https://www.nytimes.com/2021/06/03/world/africa/libya-drone.html>

### AV8 launches augmented reality mobile app for drone training APPLICATION

EDUCATION HEADLINE NEWS GEORGINA FORD JUNE 2, 2021



AV8 has launched its new Augmented Reality mobile app, AiRSpace. The app provides aviation students with a more immersive and interactive learning experience. The app sits alongside primary course material and provides users with the ability to place and explore three-dimensional items

within their real-world environment.

*“The challenge with some aspects of aviation training is how to explain complex subjects to new students effectively. Meteorology, aerodynamics and airspace are all highly abstract concepts that aren’t always intuitive,” said Lilie Weaver, AV8’s CTO. “AiRSpace takes students well beyond diagrams, talking-head videos and other 2D media, and into the world of interactive augmented reality”.*

The app works by recognizing and mapping the user’s real-world surroundings in real-time, and then allowing them to place objects into that environment. Once placed, the object retains its three-dimensional position and appears to the user as being a tangible item that can be interacted with.



Initially released with a section covering eight different types of airspace, additional modules are planned for release across the summer, covering a wide range of subjects, including principles of flight, meteorology and flight operations. AiRSpace is currently available to AV8

students in the iOS App Store, with a release to Android users via the Google Play Store



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scheduled for July 2021. <https://www.commercialdroneprofessional.com/av8-launches-augmented-reality-mobile-app-for-drone-training/>

**7Jun21**

### **Spanish Researchers Deploy Drones to Improve Wildfire Prediction** Jason

Reagan June 03, 2021



Toledo University is finding new ways to predict forest fires using drone technology. Partnering with European drone LiDAR solution provider [Routescene](#), the university assessed a forest-fire site in the Spanish province of Albacete to study the blaze's severity and distribution more precisely.

“Wildfires don’t burn evenly through forests, some areas may be barely touched, whilst in other areas, most of the trees and foliage will be severely damaged,” a Routescene press release notes. “The [findings](#) showed that UAV LiDAR data provided ecologically meaningful metrics which can be used to predict fire risk, develop more precise, site-specific fire impact studies and create post-fire management plans.”

Because satellite optical imagery can’t penetrate through a forest canopy, researchers use drones equipped with Routescene’s LiDAR system and data analysis in Routescene’s LidarViewer Pro software to create Digital Terrain Models and Canopy Height Models. The system’s lasers penetrate through gaps in foliage to detect and capture data from individual trees while also establishing a vertical profile of the canopy and vegetation.

<https://dronelife.com/2021/06/03/spanish-researchers-deploy-drones-to-improve-wildfire-prediction/>

### **Videogrammetry for Thermal Mapping: Game Changing Technology for First Responders** Miriam McNabb June 06, 2021



A new partnership between Autel Robotics and SkyeBrowse introduces videogrammetry for thermal mapping: helping first responders perform night-time accident reconstruction, pre-plan for wildfires, and perform swat scouts.

Until recently, first responders mainly relied on satellite imagery for wildfire prediction. The capture speed of photogrammetry is too slow for accurate thermal maps, which has limited the use of this technology. Videogrammetry is the solution to this problem, as the reality capture is based on a single video which is shot in 90 seconds without camera recalibration. SkyeBrowse



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has announced a videogrammetry thermal mapping feature in [partnership with drone manufacturer, Autel Robotics](#). This allows 3D modeling, both through visual cameras and non-radiometric thermal cameras. Thermal mapping provides countless benefits to firefighting, search and rescue, and nighttime situational awareness.

<https://dronelife.com/2021/06/06/videogrammetry-for-thermal-mapping/>

## The rainmaker: UAE-funded electric drone project designed to be the new cloud seeding



Scientists have developed special drones that can fire an electric charge into clouds to make them rain, potentially paving the way for downpours in the Gulf region. The project, led by British researchers and funded by the UAE, could see fleets of unmanned aerial vehicles replace manned aircraft that seed clouds with chemicals to create showers.

The drones, designed by scientists at the University of Reading, beam electricity into clouds using the charge to expand water droplets, causing the clouds to bond together and fall as rain.

Scientists have built a fleet of five drones and trained a team of pilots to fly them for testing in British clouds. But in the next few months the aircraft will move to the UAE to see how effective they are in the Gulf air that is much dustier and drier.

The new system works by ground operators directing the drones towards low clouds. Once inside the haze, the aircraft use their electric-charge emission instruments to release a burst of electricity. As clouds naturally carry positive and negative charges, altering their electrical balance could make droplets grow and merge, eventually producing rain.

<https://www.thenationalnews.com/world/asia/the-rainmaker-uae-funded-electric-drone-project-designed-to-be-the-new-cloud-seeding-1.1231540>

## Swimming or flying? Watch drone video of London's terrifying sky pool David

MacQuarrie Jun. 6th 2021



Swimming ten stories high in a transparent pool open only to residents of an apartment complex where rents start at £1,800 a month is a new way to get soaked, alright. Watch this drone video of London's startling sky pool.



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Thirty-five meters in the air, the residents of the Embassy Gardens beat the frightful British heat in an equally frightful fashion. A 25-meter-long crystal clear pool straddles two buildings of flats. It's the work of architects Arup Associates, aquarium designers Reynolds and the culmination of four years of construction.

Manufacturers in Colorado built the transparent polymer pool. It's three meters deep and weighs about 55 tonnes. The water alone weighs around 375 tonnes. "Dive in and there's nothing but clarity between you and the world below. There's no other pool in the world like the Sky Pool," Embassy Gardens says on its [website](https://dronedj.com/2021/06/06/watch-this-drone-video-of-londons-startling-sky-pool/#more-59593). <https://dronedj.com/2021/06/06/watch-this-drone-video-of-londons-startling-sky-pool/#more-59593>

### Bug-tracking drone swarms to keep New Zealand buzzing with future food

Ishveena Singh Jun. 7th 2021



Researchers are now developing drones that will track and follow insects in real-time to fuel conservation efforts.

From acting as pollinators in plant reproduction and improving soil fertility through waste bioconversion for natural biocontrol for harmful pest species, insects are fundamental to the survival of humankind.

So much so, the United Nations Food and Agriculture Organization is convinced that insects offer a huge potential for enhancing food security. The agency even [promotes](#) 1,900 edible bug species as healthy, nutritious alternatives to mainstream staples such as chicken, pork, beef, and fish.

A research team at University of Canterbury in New Zealand has spent the last three years building a wireless solution for tracking insects using [drone-mounted radar](#).



Dr. Stephen Pawson and Dr. Graeme Woodward have fabricated about 20 test harmonic radar tags to date, allowing experimentation with various parameters. The idea is that we could activate a [swarm of drones](#) that would be able to track and follow the insect in real-time. The field testing for this project is expected to begin in 2023. <https://dronedj.com/2021/06/07/bug-tracking-drone-swarms/#more-59508>

## Watch Porsche's hauntingly beautiful drone light painting shoot for 2021

**Panamera** Ishveena Singh Jun. 7th 2021



Porsche Dubai's photo shoot for the new 2021 Panamera celebrates the machine's contours at a scale so grand that you can't help but take notice.

Porsche is known for pushing the limits of great automotive photography. So, we weren't really surprised when we heard that the carmaker was giving three avant-garde photographers [complete creative freedom](#) to capture the new Panamera from their perspectives in its "Reflections of Passion" advertising campaign.



One of these photographers, Baber Afzal, decided to put drones to work.

Drone light painting, defined simply as a long exposure photo that leverages a combination of moonlight and drones with LED lights attached to them, has given us some of the best drone-based art. <https://dronedj.com/2021/06/07/porsche-drone-light-painting/#more-59638>

## Drone films never-before sighting of whales 'bubble-net feeding'

 Bruce Crumley Jun. 7th 2021

Drones have captured rare footage of migrating humpback whales off Australia, including unprecedented shots of them "bubble-net feeding" so far north.

The video was taken during the annual migration of humpback whales to the warmer waters off Australia for their breeding season. Prior to that, the creatures habitually undertake a prolonged feeding period in Antarctica – a real gorge-fest to get them through the arduous efforts of procreating. The drone footage, however, was **the first time** the humpback's "net-bubble feeding" frenzies in Antarctica were seen replicated as high up as Australia.



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The video documented the presence of a “super group” of whales in Australian waters – in this case, 33 individuals., That large a number is unique in the area.

So now the big question: just what is “bubble net feeding?” It’s a process in which whales blast air from their nostrils to trap fish, krill, and other prey in relatively small balls of oxygen. Then, either the snorting whales or others in the group rise from below, open their mouths, and eat their air-ensnared dinner. See the video: <https://dronedj.com/2021/06/07/drone-films-never-before-sighting-of-whales-bubble-net-feeding-off-oz/#more-59750>

**8Jun21**

**US Navy, Boeing conduct first-ever aerial refueling with unmanned tanker** Megan Eckstein 21 hours ago



WASHINGTON – The U.S. Navy conducted its first-ever aerial refueling between a manned aircraft and an unmanned tanker on June 4, with a Boeing-owned MQ-25 Stingray test vehicle performing its first midair tanking mission with a Navy F/A-18E-F Super Hornet. The test mission out of MidAmerica Airport in Mascoutah, Illinois, proved the unmanned tanker could successfully use the Navy’s standard probe-and-drogue

aerial refueling method.

The two F-18 aviators from Air Test and Evaluation Squadron 23 were in radio contact with the MQ-25 operator, who was controlling the unmanned aerial vehicle from a ground control station.

In total, Bujold said, the mission lasted about four and a half hours, and the two aircraft were connected for dry or wet connects for more than 10 minutes total of that time. A total of 325 pounds of fuel was passed from the MQ-25 to the Super Hornet.

<https://www.defensenews.com/naval/2021/06/07/us-navy-boeing-conduct-first-ever-aerial-refueling-with-unmanned-tanker/>

**Eve Lands 50-ship eVTOL Order from Helisul** Charles Alcock June 7, 2021

Brazilian helicopter operator Helisul Aviation today placed an order for up to **50** of the four-passenger eVTOLs being developed by Eve Urban Air Mobility Solutions. This announcement comes six days after the Embraer subsidiary logged a separate order for up to **200** of its all-



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electric, lift-and-cruise model from Halo, the new urban air mobility service launched by business aviation group—and Directional Aviation division—OneSky Flight.



The first of the new aircraft are due to be delivered in 2026. Before then, Helisul and Eve plan to start proof-of-concept air taxi operations in Brazil using Helisul's existing fleet of Airbus and Bell helicopters. Though the partners have not specified where commercial operations will begin, São Paulo would seem a likely location given the

high volume of helicopter services there.

Today's announced deal is similar to that made with OneSky Flight last week. Its new Halo division incorporates helicopter operators UK-based Halo Aviation and Northeast U.S.-based Associated Aircraft Group. <https://www.ainonline.com/aviation-news/business-aviation/2021-06-07/eve-lands-50-ship-evtol-order-helisul>

### **Skyports Completes Successful BVLOS Flights in Scotland** Kelsey Reichmann June 7, 2021



Skyports, the drone delivery company, recently completed a medical drone delivery project in Scotland demonstrating an overall 90 percent reduction in average transportation time. During a June 2 webinar, Jef Geudens, head of technology at Skyports, explained how they were able to conduct 14,000 km of beyond visual line of sight drone flights and what made the project successful.

Skyports project in Scotland was funded by a joint initiative of European and UK Space Agencies to support COVID-19 healthcare applications, Geudens said. It lasted three months, from February to May 2021, and was able to complete 14,000 km of beyond visual line of sight flight. The drones carried COVID-19 test samples and kits, medicine, and essential personal protective equipment.



During the project, Skyports worked with Kongsberg Geospatial to enable beyond visual line of sight flights.

<https://www.aviationtoday.com/2021/06/07/skyports-completes-successful-bvlos-flights-scotland/>

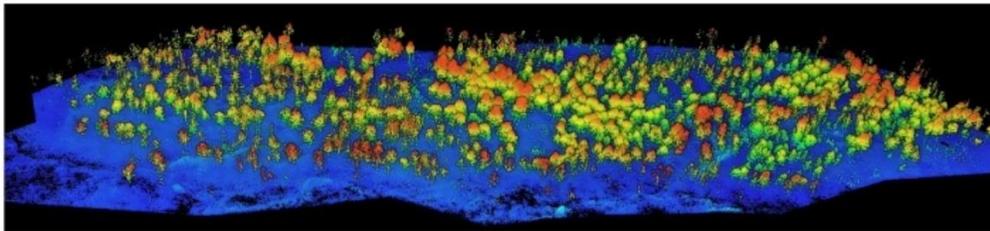


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### Predicting fire risk and improving forest fire management with UAV LiDAR

EMERGENCY SERVICES HEADLINE NEWS TECHNOLOGY GEORGINA FORD JUNE 7, 2021

Wildfires don't burn evenly through forests, some areas may be barely touched, whilst in other areas, most of the trees and foliage will be severely damaged. Understanding the severity and distribution of a fire within a forest can assist with estimating and modelling future forest fires to aid both prevention and containment.



*Different tree profiles from UAV LiDAR within the forest fire area*

Satellite optical imagery cannot penetrate through the canopy down to the low-level vegetation and the ground below. Low altitude UAV LiDAR overcomes this constraint. Lasers can penetrate through the gaps in the foliage, and the resulting three-dimensional point cloud displays the canopy, the lower vegetation, and the ground beneath. Individual trees can be detected, and the vertical profile of the canopy and vegetation can be viewed.

The project demonstrated the potential to distinguish post-fire plant structures in detail using UAV LiDAR data. When crossed with satellite-based fire severity metrics, the high-resolution results allow researchers to estimate the impact of fire on single trees, not just whole forested areas, using metrics that are ecologically meaningful down to an individual tree level. <https://www.commercialdroneprofessional.com/predicting-fire-risk-and-improving-forest-fire-management-with-uav-lidar/>

### Here's why a giant drone structure has surfaced in New York Ishveena Singh Jun. 8th 2021



A giant fiberglass sculpture in the shape of a drone has turned up atop a 25-foot-tall steel pole in a public park in New York. The structure is stripped of all details – decals, landing gear, cameras, weapons. But what is it doing there in the first place?

The sculpture is by Sam Durant, a



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Washington-born artist who lives and works in Berlin. It was commissioned by Manhattan's [High Line](#), the only park in New York City with a dedicated multimedia contemporary art program.

The sculpture is modeled after the Predator drone used by the US military to conduct reconnaissance and airstrike missions in faraway nations. Closer to home, its successors are currently employed by US Customs and Border Protection and law enforcement agencies for surveillance activities.

But just because Durant is portraying drones as a symbol of war and surveillance in this project, it doesn't mean that he is blind to the machines' many benefits. He does acknowledge the contribution of drones for humanitarian purposes, such as delivering supplies and medicine to isolated locations, surveying minefields, and taming wildfires that have ravaged landscapes.

<https://dronedj.com/2021/06/08/giant-drone-structure-new-york/#more-59875>

**9Jun21**

**AFWERX Demos Kitty Hawk's Electric Transportation Aircraft** Nichols Martin June 8, 2021 News, Technology



The U.S. [Air Force's AFWERX innovation program](#) partnered with Kitty Hawk to test the Heaviside electric aircraft in an operational exercise last month.

AFWERX's Agility Prime program and Kitty Hawk, a company focused on electric flight transportation, demonstrated the aircraft's remote flight and automated capabilities at Wright-Patterson Air Force Base, Air Force Research Laboratory.

"This exercise produced important data that will bolster the program going forward," said Lt. Col. Martin Salinas, who leads the mission design team at the Air Force Operational Test and Evaluation Center. The Heaviside electric vertical takeoff and landing aircraft demonstrated the ability to support evacuation, logistics and personnel recovery during the exercise.

California-based Kitty Hawk developed Heaviside, designed to fly at a maximum speed of 180 miles per hour. <https://www.executivegov.com/2021/06/afwerx-demos-kitty-hawks-electric-transportation-aircraft-lt-col-martin-salinas-quoted/>



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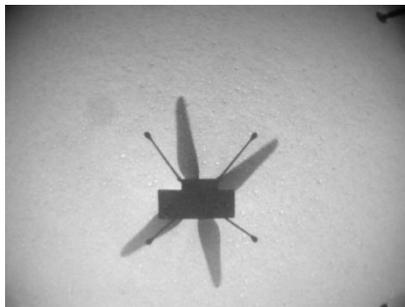
### NASA's Mars Ingenuity helicopter landed in a new spot it had never seen before

Morgan McFall-Johnsen Jun. 8, 2021, 07:54 PM



NASA's Ingenuity helicopter has defied expectations on Mars once again, flying 350 feet south to land in totally new territory.

For the second time, the tissue-box-sized drone flew to a new landing site, hovered above ground that its navigation cameras had never seen before, then gently lowered itself to touchdown. NASA only had information about the new area from its Mars Reconnaissance Orbiter, which images the red planet from space. The orbiter's pictures indicated that the spot was flat and should be safe for landing.



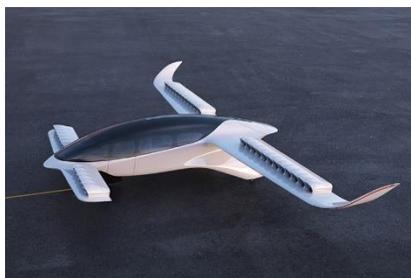
*Ingenuity captured this photo of its shadow during its seventh flight on Mars.*

The gamble paid off. Now Ingenuity is sitting in a brand new airfield with a total of seven flights under its belt.

<https://markets.businessinsider.com/news/stocks/nasa-ingenuity-helicopter-landed-in-a-new-spot-on-mars-2021-6-1030505658>

### Lilium's weird, energy-hungry "small fan" design could be a hidden ace Loz Blain

June 09, 2021



Small fans, all things considered, deliver thrust less efficiently than big ones. Lilium might have the best-looking aircraft in the eVTOL game, but it uses 36 tiny fans where competitors use 6-8 larger ones, and that's got the odd chin wagging: is Lilium shooting itself in the foot, guaranteeing its aircraft shorter range figures than open-rotor competitors carrying the same amount of battery?

In a [recent blog post](#), McIntosh points out that yes, the Lilium design, with its small ducted fans and high disc loading (the ratio of overall weight to the area of the rotors), uses twice as much power in a hover than a similar weight design with larger tilting rotors. But after the first 30



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seconds of vertical lift and transition, the small fan banks offer **low drag in forward flight**, where these aircraft will spend most of their time.

Hence, Lilium doesn't talk much about *urban* air mobility – cross-town air taxi rides – and is much more interested in **regional air mobility** – inter-city jaunts up to 200 km (124 miles) at launch, with speeds up to 300 km/h (186 mph) and only a minute or so of flight time spent in the vertical lift configuration. The Jobys and Volocopters can rule the cities; Lilium wants to be your **long-distance** eVTOL of choice. [https://newatlas.com/aircraft/lilium-interview-small-fans-pros-cons/?itm\\_source=ocelot&itm\\_medium=recirculation&itm\\_campaign=ocelot\\_e079a01&itm\\_content=recommendation\\_1](https://newatlas.com/aircraft/lilium-interview-small-fans-pros-cons/?itm_source=ocelot&itm_medium=recirculation&itm_campaign=ocelot_e079a01&itm_content=recommendation_1)

### Zenith AeroTech Keeps Tethered Aerial Vehicle Aloft for 108 Hours of Continuous Flight

June 8, 2021 News



Zenith AeroTech, a leading developer of heavy-lift tethered aerial vehicles (TAVs), announced over the span of a week, its Quad 8 multi-rotor platform flew a total of 161 hours and 49 minutes—108 hours of which were continuous, uninterrupted flight. In doing so, the TAV **far exceeded** the capabilities of competing tethered

drones and demonstrated its ability to serve as a long-endurance platform for persistent surveillance.

“Small, multirotor drones are notorious for their limited endurance. By contrast, tethered aerial vehicles, which draw power from a generator on the ground, can stay aloft for hours at a stretch,” said Kutlay Kaya, CEO of Zenith AeroTech. “But no other TAV company has ever been able to fly a platform for as long as we just did. This is a **major technological breakthrough** for small unmanned systems.”

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. [https://uasweekly.com/2021/06/08/zenith-aerotech-keeps-tethered-aerial-vehicle-aloft-for-108-hours-of-continuous-flight/?utm\\_source=rss&utm\\_medium=rss&utm\\_campaign=zenith-aerotech-keeps-tethered-aerial-vehicle-aloft-for-108-hours-of-continuous-flight&utm\\_term=2021-06-09](https://uasweekly.com/2021/06/08/zenith-aerotech-keeps-tethered-aerial-vehicle-aloft-for-108-hours-of-continuous-flight/?utm_source=rss&utm_medium=rss&utm_campaign=zenith-aerotech-keeps-tethered-aerial-vehicle-aloft-for-108-hours-of-continuous-flight&utm_term=2021-06-09)



## UAS and SmallSat Weekly News

### **Insitu, Two Norwegian Companies Join Forces to Advance the UAS Ecosystem in the Arctic** June 9, 2021 News



Insitu, a wholly-owned subsidiary of The Boeing Company, announced a strategic alliance with Norwegian-based Robot Aviation and Andøya Space to promote the unmanned aircraft ecosystem in the Arctic and High North. The alliance will offer products and services optimized for the harsh environments north of

the Arctic Circle where many North Atlantic Treaty Organization and Nordic Defense Cooperation allies operate.

The alliance will also seek to collaborate with other like-minded companies, research institutions and academic organizations that can add value to the economy in North Norway.

“Our alliance with Andøya Space and Robot Aviation is about growing a sustainable UAS value chain,” said Dave Funkhouser, Insitu’s Global Growth Executive for Northern Europe. “We aspire to service the Arctic and High North by promoting cooperation between the commercial, defense and academic sectors across the region.”

The companies plan to work together on several projects in the defense and commercial sectors beginning later this year. [https://uasweekly.com/2021/06/09/insitu-two-norwegian-companies-join-forces-to-advance-the-uas-ecosystem-in-the-arctic-and-high-north/?utm\\_source=rss&utm\\_medium=rss&utm\\_campaign=insitu-two-norwegian-companies-join-forces-to-advance-the-uas-ecosystem-in-the-arctic-and-high-north&utm\\_term=2021-06-09](https://uasweekly.com/2021/06/09/insitu-two-norwegian-companies-join-forces-to-advance-the-uas-ecosystem-in-the-arctic-and-high-north/?utm_source=rss&utm_medium=rss&utm_campaign=insitu-two-norwegian-companies-join-forces-to-advance-the-uas-ecosystem-in-the-arctic-and-high-north&utm_term=2021-06-09)

### **In a world-first, two guys compete in flying racing cars** Ishveena Singh Jun. 9th 2021



Want to know what the future of manned drone racing could look like? Hop right in, because this video by a Filipino innovator shows real people, in real single-seater flying cars, racing each other!

The video shows two single-seater flying cars, EMAY, developed by the head of Star



## UAS and SmallSat Weekly News

8 Green's eVTOL program, Kyxz Mendiola (Kyxz is pronounced as "kicks"). In the video, the red aerial vehicle is piloted by Mendiola. Controlling the green flying car is Jason Mabansay Ampongan, an electrical engineer.

The video opens with Mendiola gesturing a thumbs-up from a helipad. No sooner than he takes off, we see Ampongan pursuing Mendiola hotly. The two flying cars then complete laps inside an open field.

Full disclosure, the video isn't so much about an actual racing competition as it is about showing the possibilities of what flying car racing tournaments could look like in the future. In any case, the duo is going down in history as **the first** eVTOL pilots to attempt manned drone racing. Let's watch the video: <https://dronedj.com/2021/06/09/flying-racing-car-video/#more-59058>

**10Jun21**

**NUAIR Leads the Way for Safe Drone Operations Over People** Miriam McNabb June 08, 2021



[NUAIR](#) and New York UAS Test Site are demonstrating a path for safe drone operations over people: the newest collaboration with [Workhorse](#) and Aerial Vehicle Safety Solutions is the 5<sup>th</sup> drone parachute validation for NUAIR, enabling scalable and economically viable advanced unmanned aircraft operations.

FAA [regulations for drone operations](#) over people call for operators to verify that they can meet impact thresholds, limiting the potential damage that a drone crash could incur. Recently published ASTM International standards for drone parachutes make it easier for operators and manufacturers to evaluate parachute solutions: but recovery systems must provide evidence of rigorous testing to prove compliance.

As an FAA UAS Test Site, NUAIR and the New York UAS Test Site can act as a third-party validation service for drone businesses pushing the boundaries of current regulations. NUAIR recently worked with AVSS and drone manufacturer Workhorse to test the AVSS parachute recovery system for compliance with ASTM standards – and allow Workhorse to expedite their Durability and Reliability Testing requirements for drone operations over people.



## UAS and SmallSat Weekly News

<https://dronelife.com/2021/06/08/nuair-leads-the-way-for-safe-drone-operations-over-people-workhorse-and-avss-collaboration/>

### **Skyports joins forces with South Korea smart technologies company Hanwha Systems** HEADLINE NEWS INNOVATION GEORGINA FORD JUNE 9, 2021



Global smart technologies company, Hanwha Systems (CEO Kim Youn Chul Kim), and [Skyports](#), the UK based advanced air mobility (AAM) infrastructure provider, have signed a Memorandum of Understanding to foster air mobility projects that will include collaboration in areas such as infrastructure, flight services and a mobility platform.

By applying Skyports' technology expertise, Hanwha Systems will establish the foundations for AAM globally, including South Korea. The partnership will see Skyports and Hanwha

Systems develop technology for AAM infrastructure which meets VTOL aircraft operator demands while supporting environmental goals. In addition, the collaboration aims to deliver technological developments which will facilitate a seamless passenger experience and a fast and convenient boarding process.

Skyports was the first to build a full-scale passenger air taxi vertiport – the take-off and landing infrastructure for VTOL (vertical take-off and landing) aircraft – which was launched as part of a trial that took place in Singapore in 2019. Skyports currently has infrastructure projects in development elsewhere in Asia, Europe and North America.

<https://www.commercialdroneprofessional.com/skyports-joins-forces-with-south-korea-based-smart-technologies-company-hanwha-systems/>

### **PRIMOCO UAV successfully tested an emergency parachute ballistic landing system** HEADLINE NEWS NEW PRODUCTS GEORGINA FORD JUNE 8, 2021



On June 1, 2021, the company successfully tested the emergency parachute ballistic landing system on the Primoco UAV One 150 at the factory airport in Písek-Krašovice. At an altitude of 100 metres above the ground, with a cruising speed of 120 km/h and a weight of 150 kg, the aircraft landed safely. The system was developed in co-

operation with the Czech company Galaxy Holding.



## UAS and SmallSat Weekly News

The Czech company Primoco UAV develops and manufactures civilian and military unmanned aircraft. They are capable of flying independently according to programmed flight plans, including fully automatic take-off and landing. One of the features of the aircraft is its exceptional endurance. It can spend more than 15 hours in the air at a cruising speed of 100-150 km/h, which represents a range of up to 2,000 km. <https://www.commercialdroneprofessional.com/primoco-uav-successfully-tested-an-emergency-parachute-ballistic-landing-system/>

### **Calhoun: Aerion Investment Outpaced Benefit to Boeing** Kerry Lynch June 9, 2021



Boeing president and CEO Dave Calhoun recently shed more light on his company's decision to support urban air mobility emerging technologies such as Wisk rather than supersonic designer Aerion, which recently shuttered over a lack of funding.

If a project doesn't bring such benefit to Boeing, then it has to stand on its own, Calhoun said. "And our decision on supersonic was that [it didn't]. We couldn't get there with respect to the market, with the respect to the needed investment," he said

Boeing, he added, did opt to stick with investing in the all-electric Cora eVTOL under development by Wisk, which is a joint venture by Boeing and Kitty Hawk. "We love it," Calhoun said. "It's an incredible airplane." He noted that the aircraft has accumulated 1,500 "perfect flights with respect to tests or autonomy, demonstrating autonomy [and] demonstrating quiet." <https://www.ainonline.com/aviation-news/business-aviation/2021-06-09/calhoun-aerion-investment-outpaced-benefit-boeing>

### **FAA Forms New Rulemaking Committee to Advance BVLOS Drone**

#### **Operations** Kelsey Reichmann June 9, 2021



Administrator Steve Dickson announced at the FAA Unmanned Aircraft System (UAS) Symposium on June 9 - "the FAA is forming a new aviation rulemaking committee for ARC [Aviation Rulemaking Committee], to help us develop a regulatory path for routine beyond visual line of sight operations. This committee will consider the safety, security and environmental needs as well as societal benefits of these operations."



## UAS and SmallSat Weekly News

Dickson said the committee would be submitting its recommendations to the FAA within six months. “Right now, there are several companies using limited beyond visual line of sight, under existing regulations with waivers to conduct routine surveillance inspection and maintenance tasks for the railroad, electric, oil and gas and communications industries, and we're learning a lot from this work but the operations...are not truly scalable or economically viable in the mid to long term under today's rules so we need to change that.”

The new BVLOS recommendations that come out of the committee will work in conjunction with remote ID and operations over people and at night rules which were released in [December of 2020](#) and implemented earlier this year. <https://www.aviationtoday.com/2021/06/09/faa-forms-new-rulemaking-committee-to-advance-bvlos-drone-operations/>

### **Vertical Aerospace to go public in \$2.2 billion SPAC deal** Reuters June 10, 20215

Aerospace & Defense



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.

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](#)). The deal is expected to close in the second half of 2021. <https://www.reuters.com/business/aerospace-defense/american-airlines-invest-electric-aircraft-maker-vertical-aerospace-2021-06-10/>