



## UAS and SmallSat Weekly News

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27Feb21

## Stunning video shows just how quiet Joby's eVTOL air taxi will be Loz Blain

February 24, 2021



Here's our first proper look at the **world's most advanced** eVTOL air taxi taking off, transitioning to horizontal flight, cruising and landing. Joby released the videos as part of an investor push as it gears up to go public on the New York Stock Exchange.

The Californian company has been working on its aircraft far longer than most, and its five-seat, 200-mph electric VTOL aircraft has already proven itself in more than **1,000 test flights**. Offering a range up to 150 miles using existing battery technology, the Joby aircraft uses six large tilting rotors to achieve vertical lift and horizontal winged cruise. It's one of the most complete aircraft in the space. The company has enormous manufacturing resources behind it thanks to a [mega-deal with Toyota](#). It also owns [Uber Elevate](#), and thus has the potential to put together a beautifully integrated multi-mode travel service with millions of users already signed up.

It's the best funded company in the eVTOL space, with the closest thing to a finished aircraft, it's [agreed on certification terms with the FAA](#) and has a substantial leg up when it comes time to launch a service. If cheap, **quiet** eVTOL urban air taxis are going to be a thing, Joby seems well positioned to lead the market early. <https://newatlas.com/aircraft/joby-aviation-evtol-video/>

## Swoop Aero to trial medical delivery drones in regional Queensland 2021-02-23



Drone company Swoop Aero, in partnership with Australian healthcare wholesaler Symbion and pharmacy retailer TerryWhite Chemmart, has announced plans to begin trialing the delivery of medication using drones.

The trial, which remains subject to regulatory approval, will take place in the Queensland town of Goondiwindi. Swoop Aero's drone network will deliver medication within a 130-kilometer range of the town from the local TerryWhite Chemmart pharmacy to residents who typically have to travel up to three hours to reach the pharmacy.

"The drone will fly in and out of a central point in Goondiwindi with the flight path fully **automated** and approved by CASA [Australia's aviation regulator], deliver the customers products, then return to base ready for its next job.

The drones will be **operated remotely** from Swoop Aero's headquarters in Melbourne. Each drone, according to the company, can reach speeds of up to 115 kilometers per hour and withstand extreme weather conditions including 50 kilometers per hour winds and heavy rain.

[https://www.uavexpertnews.com/2021/02/swoop-aero-to-trial-medical-delivery-drones-in-regional-queensland/?utm\\_source=Master&utm\\_campaign=f4b57de7b8-EMAIL\\_CAMPAIGN\\_2017\\_12\\_20\\_COPY\\_01&utm\\_medium=email&utm\\_term=0\\_35ad7bc94d-f4b57de7b8-89168288](https://www.uavexpertnews.com/2021/02/swoop-aero-to-trial-medical-delivery-drones-in-regional-queensland/?utm_source=Master&utm_campaign=f4b57de7b8-EMAIL_CAMPAIGN_2017_12_20_COPY_01&utm_medium=email&utm_term=0_35ad7bc94d-f4b57de7b8-89168288)



### NCDOT Conducts First Bridge Inspection Using Drone February 25, 2021 News



This week, the Marc Basnight Bridge over Oregon Inlet became the first bridge in the state inspected using a drone as part of the regular biennial inspection process. Inspection crews monitored live high-definition video feeds from the drone as it was flown around the bridge’s 10 largest columns, looking for any potential defects that would require further

action.

NCDOT will use drones to conduct bridge inspections faster, saving money and reducing the need for lane closures. Drones will not replace a traditional visual inspection in most instances. However, they will be used to supplement traditional inspections and add benefit by being able to inspect areas of the bridge that are difficult to reach during a traditional visual inspection. A waiver granted to NCDOT in 2020 by the Federal Aviation Administration allows the department to operate drones beyond visual line of sight when inspecting bridges. This lets the operator fly the drone around pillars, between girders and even inside columns. The drone used in this case, a Skydio 2, is equipped with detect-and-avoid technology that allows it to operate within a foot of the bridge structure without risk of crash.

[https://uasweekly.com/2021/02/25/ncdot-conducts-first-bridge-inspection-using-drone/?utm\\_source=rss&utm\\_medium=rss&utm\\_campaign=ncdot-conducts-first-bridge-inspection-using-drone&utm\\_term=2021-02-26](https://uasweekly.com/2021/02/25/ncdot-conducts-first-bridge-inspection-using-drone/?utm_source=rss&utm_medium=rss&utm_campaign=ncdot-conducts-first-bridge-inspection-using-drone&utm_term=2021-02-26)

### Search and rescue drone uses phone signals to find victims Josh Spires Feb. 26, 2021



[The idea is smart and simple.](#) A drone is sent up over a specific area with a cellular base station equipped to it. The drone will then fly over the area and detect signals from the phones in the area, find the location of the phone and send it back to rescuers.

The team built the product using off-the-shelf hardware and called it the search and rescue drone-based solution

(SARDO). It normally requires three cell towers to locate a person. The team has been able to remove this need as the cell tower itself can move. This allows various measurements to be taken to pinpoint the exact location of the person.

Cell towers are often taken offline when a natural disaster strikes, resulting in a lack of communication, making it harder for people to call for help and be located. As the system uses a drone, it is fully battery powered and could even open the possibility of creating a makeshift cellular network, allowing emergency services to locate people and people to call their loved ones.

As SARDO still has issues that need to be worked out, the team plans to continue working on it and improving it over the coming years. <https://dronedj.com/2021/02/26/search-and-rescue-drone-uses-phone-signals-to-find-victims/#more-51046>



**Think a Mars mission is difficult? Try landing a rock in your backyard** David

MacQuarrie Feb. 26. 2021



Drone pilot Nicholas Rehm shows just how difficult it is when he tries to simulate a Martian landing with a drone and a rock.

Because the Martian atmosphere is so thin, a parachute alone isn't enough to slow down a heavy payload like Perseverance. So NASA engineers tethered it to a [kind of drone](#) they call a sky crane that gently dropped the rover in Jezero Crater.

To show what can happen, Rehm hooked up a winch and tether to a quadcopter and attempted to land a rock in a backyard. As the winch unwinds, the rock starts to swing. The oscillations cause the drone to move erratically. As he attempts to get the drone under control, things just get worse. It's a double pendulum and it's literally chaotic.

[NASA's sky crane](#) must sense the angle on the tether and quickly and automatically compensate.



Interestingly, this payload on a wire idea is exactly how an Israeli company plans to deliver packages to homeowners. Flytrex is [working with Walmart](#) to bring purchases to customers almost as soon as they order them. It anticipates delivering 10,000 packages a month by the [end of this year](#). This video suggests they also have the double pendulum problem figured out. Otherwise consumers would

be playing tetherball with their deliveries. <https://dronedj.com/2021/02/26/simulate-martian-landing-drone/#more-51110>

**28Feb21**

**Drones help protect forests in northwestern Turkey** DAILY SABAH WITH

AA ISTANBUL TURKEY FEB 26, 2021



As it seeks to preserve [its growing forests](#), both against pests and fires, Turkey taps into new technology. A new set of high-technology drones, which can create 3D models of disaster sites, are being used to extinguish [forest fires](#) effectively in northwestern Turkey. The Regional Directorate of Forestry in Bursa province purchased the drones in cooperation with Bursa Technical University. The drones can also track pests and protect the flora and fauna.

For the past two years, the directorate has allocated TL 1 million (around \$135,000) for the drones, which successfully killed pests that had spread to a large part of the forested area between the Inegöl district of Bursa and the Domaniç district of western Kütahya province.



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The first high-tech drone purchased in 2019 was used in six forest fires in Bursa, Istanbul, Izmir and Çanakkale provinces in the consequent year. Thanks to the L1 camera attached to the new drone, 3D maps can be captured and transferred to the fire operations center. The directorate's head, Yalçın Akın, told Anadolu Agency on Friday that the devices have made an important contribution to the live monitoring of fires and determining extinguishing strategies. <https://www.dailysabah.com/turkey/drones-help-protect-forests-in-northwestern-turkey/news>

### NHS Scotland employs drones to quickly transport vital medical supplies Ryan Daws 23rd February 2021 TechForge Media



Drones are helping transport supplies – including medicines, COVID-19 testing samples and kits and PPE – to the remote Argyll & Bute region of Scotland as part of a three-month trial.

The drones utilize Vodafone’s 4G network for communication and can travel up to 40 miles at a time. Each drone can carry

up to 3kg of medical supplies.

Argyll & Bute stretches over 2,500 sq miles along the west coast of Scotland and has a population of around 86,000 people. Due to the remoteness of the region, supplies can currently take up to **36 hours** to reach their destination. By using drones, supplies can be delivered in as little as **15 minutes**.

Scheduled and on-demand flights will service Lorn & Islands Hospital in Oban; Mid-Argyll Community Hospital in Lochgilphead; Easdale Medical Practice in Clachan Seil; and the Mull & Iona Community Hospital in Craignure.

The flights are operated by drone specialists Skyports and are the **first** to be licensed by the Civil Aviation Authority to carry diagnostic specimens.

<https://iottechnews.com/news/2021/feb/23/nhs-scotland-employs-drones-transport-vital-medical-supplies/>

### Air Race E now open to VTOL aircraft HEADLINE NEWS JOE PESKETT FEBRUARY 28, 2021



The move is the result of high levels of interest and demand from across different sectors of the aerospace industry. The new electric VTOL class will be named the V-Class. VTOLs – often called flying cars – are a different category of aircraft altogether. Air Race E is positioning this class as **‘The World’s First Vertical**





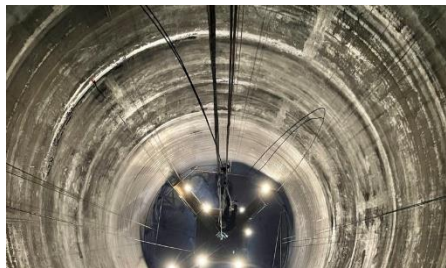
**Motorsport’.**

Jeff Zaltman, CEO of Air Race E, said: “The V-Class demonstrates a major step-change in air racing. Air Race E will be working directly with the top pioneering organizations in the e-VTOL world to shape the event to be at the vanguard of both technology and entertainment in this next generation of motorsport.”

Air Race E is partnering with firms such as Airbus, which is the Official Founding Partner, and Ansys, which is the Official Simulation Software Partner.

<https://www.commercialdroneprofessional.com/air-race-e-now-open-to-vtol-aircraft/>

**Flyability Elios 2 used in oil refinery drone inspection first** HEADLINE NEWS JOE PESKETT FEBRUARY 28, 2021



Inspection experts from PIT were recently asked to conduct an internal inspection of a coke drum at an oil refinery in Texas, US, without using scaffolding. Scaffolding is expensive and time-consuming to put up and take down. Inspectors from PIT proposed using a combination of drone technology and manned rope access within the coke drum.

“Premium has years of experience performing inspections via rope access, having clocked a total of 2.2 million safe hours on ropes with zero accidents,” said Danny Landry, Premium’s VP of Business Development & Marketing. “We also have experience using drones to collect visual data for inspections, so we were excited to agree to take on the job without building scaffolding.” The Flyability’s Elios 2 has a unique cage design that was created for inspections in confined spaces.

For the coker inspection, the PIT team used the Elios 2 to collect visual data inside the coker which was used to make sure it was clean and safe for the ropes team to enter. The drone’s visual data was also processed by automated crack detection algorithms, helping to pinpoint possible defects within the coker that the ropes team could investigate further.

<https://www.commercialdroneprofessional.com/flyability-elios-2-used-in-oil-refinery-drone-inspection-first/>



1Mar21

**Skunk Works Reveals Speed Racer Configuration** Steve Trimble February 26, 2021



Lockheed Martin’s Skunk Works plans to begin flight-testing the Speed Racer vehicle in the near future.

Lockheed Martin’s Skunk Works has taken the wraps off an experimental, air-launched unmanned aircraft system called Speed Racer that is meant to validate a new manufacturing process as much as a possible new weapon system.

A company-produced video reveals a small, jet-powered unmanned aircraft system with a hexagonal fuselage, folding and swept wings, plus two sharply canted aft dorsal tails, along with one ventral tail.

The unidentified UAS is launched by a twin-engine aircraft that strongly resembles a Beechcraft 1900D, although the launch platform choice in the video may be arbitrary. During the launch sequence, the UAS is released from a wing store. An exhaust plug is ejected as the engine starts, and the wings fold out to provide lift. As the UAS cruises low over a rocky landscape, no hint of a specific mission is shown.

Reflecting the new trend of military design that blurs the line between a reconnaissance-gathering UAS and a target-seeking cruise missile, either a sensor payload or a warhead may be on board. [https://aviationweek.com/defense-space/missile-defense-weapons/skunk-works-reveals-speed-racer-configuration?utm\\_rid=CPEN1000003332045&utm\\_campaign=27279&utm\\_medium=email&elq2=e70e388e12654cfd952ff0e3e2c385a2](https://aviationweek.com/defense-space/missile-defense-weapons/skunk-works-reveals-speed-racer-configuration?utm_rid=CPEN1000003332045&utm_campaign=27279&utm_medium=email&elq2=e70e388e12654cfd952ff0e3e2c385a2)

**SKYDIO VALUATION TOPS \$1 BILLION AFTER \$170 MILLION SERIES D**

**ROUND** March 1, 2021 Sally French The Drone Girl News



Today marks a huge **milestone** for U.S. based drone maker Skydio. The company behind the crash-proof drone on March 1 announced a \$170 million Series D funding round, bringing the total Skydio valuation to more than **\$1 billion**.

Skydio says it will use the money to “further accelerate product development and global sales expansion to support the rapidly growing demand for its autonomous drone solutions.”



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The company rose to the spotlight with its “crash-proof” drone thanks to sensors and all sides, allowing the drone to be fully aware of its environment. The first consumer-focused drone, the [Skydio R1](#) was certainly intriguing, but the company really took off with the 2019 introduction of the [Skydio 2](#), which was far more ambitious — and user-friendly. Later in 2021, Skydio will release the Skydio X2, which is designed for enterprise audiences.

Today’s news brings total funding raised to over **\$340 million**. Other funding came from existing investors Linse Capital, Next47, and IVP, along with new investor UP.Partners.

<https://www.thedronegirl.com/2021/03/01/skydio-valuation/>

### **DroneShield Snags research Deal with Homeland Security** Jason Reagan March 01, 2021



Australian counter-drone firm [DroneShield](#) has inked a deal with the Department of Homeland Security’s Science and Technology Directorate to research drone detection mitigation technology.

Deploying its DroneSentry and DroneSentry-C2 systems, the project will leverage RF, radar, infrared and acoustic sensors to help detect, classify, identify and track rogue drones. DroneSentry is a modular system that uses artificial intelligence-based RF detection, long-range sensing and expanded multi-sensor data fusion capabilities while DroneSentry-C2 provides end users with what a DroneShield spokesperson calls “an interoperable common operating picture for the counter-UAS mission.”

DroneSentry-C2 pairs sensor tech from DroneSentry with an intuitive enterprise level **visual platform** that “enables users to easily deploy a complete detection and threat assessment capability of [drones] for their critical infrastructure and base protection needs.”

<https://dronelife.com/2021/03/01/droneshield-snags-research-deal-with-homeland-security/>

### **FAA announces new application period for potential LAANC suppliers** February 24, 2021 Philip Butterworth-Hayes UAS traffic management news



The US Federal Aviation Administration has announced the next application period to become FAA Approved UAS Service Suppliers of the [Low Altitude Authorization and Notification Capability \(LAANC\)](#). The [application period](#) opens on May 3, 2021. According to the FAA:

“LAANC is a collaboration between the FAA and the drone industry that directly supports the safe integration of drones into the nation’s airspace. Launched in 2017, the capability covers 80 percent of controlled National Airspace at 400 feet or below and expedites the time it takes for





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drone pilots to receive near real-time authorizations to fly in this space. All drone pilots operating in LAANC-enabled areas under the [FAA's small drone rule](#) or under the exception for [limited recreational operations](#) can access the capability through FAA Approved LAANC Service Suppliers. LAANC provides drone pilots with industry developed applications to obtain near real-time airspace authorizations for operations in a controlled airspace below 400 feet. LAANC does not provide entities with the authority to regulate the airspace or grant access without FAA approval." <https://www.unmannedairspace.info/latest-news-and-information/faa-announces-new-application-period-for-potential-laanc-suppliers/>

### **Drones brought in to protect marine life around Britain's coast** HEADLINE NEWS JOE PESKETT MARCH 1, 2021



Marine wildlife charity Project Seagrass has acquired fixed-wing drones to help protect sea life off the coast of Scotland. The two Swiss-made WingtraOne drones were supplied by Coptrz and will be used to map the coastal seascape from May.

Dr Richard Lilley, CEO Project Seagrass, said: "The recent development of high quality drones such as the WingtraOne is having a positive impact on the ability of scientists to map the habitats of the coastal seascape. "The combination of high-quality satellite imagery, combined with detailed multispectral drone images, and habitat ground truthing, is significantly enhancing the detail with which scientists are now able to map coastal habitats. Understanding the extent and characteristics of habitats present is important because it enables us to predict the kind of species that might live within them. Using this new Wingtra One we will not only be better able to visualize seagrass meadow extent, but we will also be in a better position to understand habitat connectivity, and to protect the biodiversity that lives in coastal zones."

The WingtraOne PPK VTOL is a **fully autonomous** drone specifically designed for long-distance surveying applications. The WingtraOne is capable of flying for **55 minutes**, and it has been designed to cover long distances. <https://www.commercialdroneprofessional.com/drones-brought-in-to-protect-marine-life-around-britains-coast/>

### **Iris Automation seeks to jumpstart commercial BVLOS ops in Canada**

REGULATION JOE PESKETT MARCH 1, 2021



Iris Automation has partnered with two of Canada's leading remotely piloted aircraft system test facilities for support, training and proving BVLOS flight competency – Foremost UAS Test Range in Alberta and UAS Center of Excellence in Alma, Quebec. The program includes flight training, assistance gaining BVLOS approvals, a BVLOS safety system, engineering and regulatory support and test center access. The program is open to any organizations interested in operating BVLOS services in Canada.



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In October, Transport Canada issued the second Special Flight Operations Certificate for Beyond Visual Line of Sight flights in uncontrolled airspace utilizing infrastructure masking and Iris Automation's onboard detect-and-avoid solution to MVT Geo-solutions.

<https://www.commercialdroneprofessional.com/iris-automation-seeks-to-jumpstart-commercial-bvlos-ops-in-canada/>

### **F-drones raises seed round funding with major shipping companies** International Shipping News March 1, 2021



F-drones, a Singapore-based startup developing **large scale autonomous drones** for maritime logistics, today announced its success in raising its seed capital. The round was led by Eastern Pacific Shipping, a world-leading ship management company committed to green and technology-driven growth of the maritime industry. The round also saw participation from the Schulte Group, a reputed ship owner and manager with over 135 years of experience, through its venture arm – Innoport, along with SEEDS Capital, Entrepreneur First, Orient Ventures, Superangel and a few Singapore based angel investors.

F-drones is **the first company in the world to provide 24/7 commercial Beyond-Vision-Line-Of-Sight drone deliveries to ships**. It is developing the Hyperlaunch Heavy, a fully electric and autonomous proprietary drone, capable of delivering **100kg payloads over 100km**. "We are excited to be able to close the round with more capital than we initially intended. This demonstrates the industry's confidence in our capability and vision to make maritime logistics more efficient, sustainable and safe. The capital will enable us to grow our team, accelerate our technology development and bring an unparalleled solution to market faster", says Yeshwanth Reddy, co-founder of F-drones. <https://www.hellenicshippingnews.com/f-drones-raises-seed-round-funding-with-major-shipping-companies/>

### **Climate Scientists Are 'Hunting' Hurricanes with Specialized Drones** Donovan Alexander Feb 28, 2021



Since 2005, and in collaboration with Raytheon, NOAA has been developing drones capable of temporarily flying through the turbulent winds of a hurricane. Since around 2016, Raytheon's Coyote fixed-wing drones have been used to track important weather measurements like temperatures, pressure, wind speed, wind direction, humidity, and sea surface temperature.



NOAA's drone project is continuing to get off the ground. In 2021, they tested their most advanced hurricane hunting drone yet, the Altius-600. Once the Altius passes its extensive testing, the drone could join the Coyote in collecting hurricane data from the lower eyewall. It also offers new data-gathering features, such as the ability to fly up to four hours and distances up to 265 miles from its point of launch. Unfortunately, also like



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the Coyote, the Altius cannot be recovered when deployed in storms.

<https://interestingengineering.com/climate-scientists-hunt-hurricanes-with-drones>

### New Film Festival Highlighting Technology Is Set to Debut in Southern California

February 28, 2021 News



The inaugural Southern California Drone Film Festival is set for March 6, 2021 and marks the only event of its kind in California. The **one-day virtual event** will include panels on drone technology, cinematography, and video production, and will culminate with the awards ceremony highlighting shorts from creative storytellers. The festival is the brainchild of Southern California native Jay Seidel. A Fullerton College professor and head of the Fullerton Drone Lab.

In addition to showcasing the finalists and announcing the winners of the 14 categories, the festival will provide videos of interviews with filmmakers, photographers, journalists, drone professionals. There will also be some training videos, as well as an exclusive screening of a new documentary on the first-person view drone craze.

Seidel said the festival looks to encourage education as well as expanding creativity. “The panels and workshops will help inform and enlighten filmmakers and drone professionals of every level.”

Tickets are only \$25 for a month access to the content. The Southern California Drone Film Festival showcases the best and most creative content captured by drones by aspiring and professional filmmakers from around the world. More information can be found at the festival website: [socialdronefilmfestival.com](http://socialdronefilmfestival.com). [https://uasweekly.com/2021/02/28/new-film-festival-highlighting-technology-is-set-to-debut-in-southern-california/?utm\\_source=rss&utm\\_medium=rss&utm\\_campaign=new-film-festival-highlighting-technology-is-set-to-debut-in-southern-california&utm\\_term=2021-03-01](https://uasweekly.com/2021/02/28/new-film-festival-highlighting-technology-is-set-to-debut-in-southern-california/?utm_source=rss&utm_medium=rss&utm_campaign=new-film-festival-highlighting-technology-is-set-to-debut-in-southern-california&utm_term=2021-03-01)

### Johnny FPV takes to the sky in Juice WRLD’s latest music video [Josh Spires](#)

Mar. 1st 2021



One of the most [well-known FPV pilots](#), Johnny FPV or Johnny Schaer has taken to the sky in the late rapper Juice WRLD’s latest music video for his song “Conversations.” The video combines clips of Juice WRLD with an FPV drone chasing motocross riders as they perform tricks.

The video opens with an FPV drone speeding above the tree line. After a few shots of Juice WRLD himself, it then cuts back to the drone where we see a helicopter flying low to the ground, and the shots of the motocross riders begin.



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Drone shots are scattered throughout the video, with what looks to be a few shots captured from the helicopter as well. From the video, we get to see two drones. One looks to be a cinewhoop-style drone known for its slower speeds but smoother and cinematic footage. The other drone that can be seen looks to be a much larger racing X-Class-style drone, allowing larger cameras, like the RED cinema cameras, to be carried. You can watch the video and keep an eye out for the drone shots and the shots where the drones appear.

<https://dronedj.com/2021/03/01/johnny-fpv-takes-to-the-sky-in-juice-wrlds-latest-music-video/>

2Mar21

### COMSovereign Expands Aerial Platform Business Through Sky Sapience

**Acquisition** Mary-Louise Hoffman March 2, 2021 News



Dallas-based communications technology company [COMSovereign Holding](#) (Nasdaq: COMS) has acquired Israel-based aerial rotorcraft developer [Sky Sapience](#) in a **\$12.7 million deal** that combines \$2.7 million in cash and \$2.55 million in stock.

Sky Sapience offers the [HoverMast tethered drone product line](#) for airborne wireless network deployment, big event monitoring and border security applications. The combined entity aims to bring aerial platforms to the departments of Homeland Security and Defense.

“The benefits of tethered aerial platforms in providing critical communications during emergencies or enhanced security and situational awareness through 24x7 aerial monitoring of critical infrastructure and along national borders, is well known,” said [Dan Hodges, chairman and CEO of COMSovereign](#). Hodges added that Sky Sapience’s fiber-optic tether system could drive the implementation of airborne 4G or 5G connectivity along with surveillance payload technology in a single platform. [https://www.govconwire.com/2021/03/comsovereign-expands-aerial-platform-business-through-sky-sapience-acquisition-dan-hodges-quoted/?utm\\_campaign=Posts%20from%20GovconWire%20%2003.02.2021%20%28UaC8Ks%29&utm\\_medium=email&utm\\_source=Executive%20Mosaic%20Publications&\\_ke=eyJrbF9jb21wYW55X2lkIjogIIRCS0t4UCIsIjRbF9lbWFpbCl6ICJyb2JlcnQucmVhQGF4Y2VsLnVzIn0%3D](https://www.govconwire.com/2021/03/comsovereign-expands-aerial-platform-business-through-sky-sapience-acquisition-dan-hodges-quoted/?utm_campaign=Posts%20from%20GovconWire%20%2003.02.2021%20%28UaC8Ks%29&utm_medium=email&utm_source=Executive%20Mosaic%20Publications&_ke=eyJrbF9jb21wYW55X2lkIjogIIRCS0t4UCIsIjRbF9lbWFpbCl6ICJyb2JlcnQucmVhQGF4Y2VsLnVzIn0%3D)

### Drones for Disinfection: State Farm Arena Brings Lucid Drone Tech to the Game

Miriam McNabb March 01, 2021



The award-winning State Farm Arena, home of the Atlanta Hawks, is the first in the NBA to use drones for disinfection, as the arena prepares to host the annual NBA All-Star Festivities and start the second half of the 2020-21 season. State Farm Arena has brought on [Lucid Drone Technologies](#) to use their D1 Disinfecting Drone to help in sanitizing the 17,500 seat venue between events.



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“The 27-pound drone holds a 10-liter tank of cleaning solution and is equipped with multiple sets of batteries and a custom charger to allow for continuous cleaning cycles,” says a Lucid press release. “At full charge, the D1 can cover 150,000 square feet in an hour, making the total time to disinfect State Farm Arena one-and-a-half hours.”

The D1 is programmed using an indoor flight mode rather than GPS-based navigation as most drone systems are: and is built specifically to dispense disinfectant products.

<https://dronelife.com/2021/03/01/drones-for-disinfection-state-farm-arena-home-of-atlanta-hawks-brings-lucid-drone-tech-to-the-game/>

## Boeing to base U.S. Air Force prototype on Australian pilotless combat jet

Jamie Freed



SYDNEY (Reuters) - Boeing Co will use a pilotless, fighter-like jet developed in Australia as the basis for its U.S. Air Force Skyborg prototype, an executive at the plane maker said on Tuesday.

The “Loyal Wingman”, the first military aircraft to be designed and manufactured in Australia in more than 50 years, made its **first flight** on Saturday under the supervision of a Boeing test pilot monitoring it from a ground control station in South Australia. Boeing’s Loyal Wingman is 38 feet long, has a 2,000 nautical mile range and a nose that can be outfitted with various payloads. The plane can also carry weapons and act as a shield to help protect more expensive manned fighter jets.

The U.S. Air Force in December awarded multi-million-dollar contracts to Boeing, General Atomics Aeronautical Systems and Kratos Defense and Security Solutions to produce unmanned aerial prototypes that can team with crewed jets. <https://www.reuters.com/article/us-boeing-defense-unmanned/boeing-australian-air-force-say-pilotless-fighter-like-jet-completed-first-test-flight-idUSKCN2AU060>

## World's first supersonic unmanned combat aerial vehicle launches at \$16 million price tag

STACY LIBERATORE FOR DAILYMAIL.COM 1 March 2021



Singapore-based Kelley Aerospace has officially launched the world's first supersonic unmanned combat aerial vehicle Called 'Arrow,' the drone is designed with a single-shell made of lightweight carbon fiber that allows speeds up to Mach 2.1.

It is fitted with a reduced radar cross-section and infra-red signature and is designed for multiple combat or reconnaissance roles. The firm says it has already received more than 100 pre-orders, which costs between \$9 million and \$16 million.





## UAS and SmallSat Weekly News

'The Arrow is designed to complement manned aircraft and be a force multiplier in the aerial battlefield.' <https://www.dailymail.co.uk/sciencetech/article-9313025/Worlds-supersonic-unmanned-combat-aerial-vehicle-reaches-speeds-Mach-2-1.html?ito=1490>

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### FAA Selects Five Airports to Test Unmanned Aircraft Detection and Mitigation Systems

March 2, 2021



The Federal Aviation Administration today selected five host airports to evaluate technologies and systems that could detect and mitigate potential safety risks posed by unmanned aircraft. The effort is part of the agency's Airport Unmanned Aircraft Systems Detection and Mitigation Research Program.

The FAA selected the following airports:

- Atlantic City International Airport in Atlantic City, New Jersey
- Syracuse Hancock International Airport in Syracuse, New York
- Rickenbacker International Airport in Columbus, Ohio
- Huntsville International Airport in Huntsville, Alabama
- Seattle-Tacoma International Airport in Seattle, Washington

These airports meet FAA requirements for diverse testing environments and represent airport operating conditions found across the United States. The research will lead to the implementation of new technologies that will make airports safer for passengers and manned aircraft. [Researchers plan to test and evaluate at least 10 technologies or systems at these airports.](#)

### Optelos DSP Inspector Program Proves Partnerships the Way to Thrive in the Drone Industry

Miriam McNabb March 02, 2021



Drone service providers need drone data management – and they need to keep finding new customers. The Optelos DSP Inspector™ Program is designed to meet those needs, in a partnership that helps both parties grow.

As the drone industry grows, Drone Service Providers (DSPs) offer crucial services for the inspection of critical assets in verticals like energy and oil and gas. Making the contacts to find clients, however, can be a challenge for DSPs. That's when forming the right drone industry partnerships can be a growth accelerator.



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[Optelos](#), an industry leading SaaS platform for Enterprises, offers a [drone data management](#) ecosystem that helps infrastructure companies digitize their inspections. Now, Optelos is launching a dedicated platform for Drone Service Providers to help operationalize the delivery of digital asset inspection to Enterprises. As part of the [Optelos DSP Inspection Program](#), qualified DSPs will be included in the Optelos Service Provider Network – where Optelos customers can directly request services from the DSP. <https://dronelife.com/2021/03/02/optelos-dsp-inspector-program-proves-partnerships-are-the-way-to-get-customers-and-thrive-in-the-drone-industry/>

### **Dronehub secures nearly \$2m to develop mobile drone infrastructure** INDUSTRY LEADER JOE PESKETT FEBRUARY 25, 2021



A consortium led by Dronehub has received **\$1.9m** of funding from Poland’s National Centre for Research and Development to develop mobile drone infrastructure for **automatic orthophotos**.

“The world and technology are rushing forward, performing measurements or inspections of large industrial areas by humans is already a waste of money and time,” said Vadym Melnyk, founder and CEO of Dronehub. “As part of this project, we will improve our system, in which these processes are carried out fully autonomously by drones, without the need to involve an operator.

“In addition, we will develop extremely precise algorithms thanks to which the drone carrying out the mission will be able to use the docking station when it is moving, at a speed of up to 30 km/h..”

The project involves the development of a system for creating orthophotos by drones as well as for transferring and archiving the collected data. It will be used mainly in industry and agriculture for monitoring, inspection and measurement and will last until February 2023.

[https://www.commercialdroneprofessional.com/dronehub-secures-nearly-2m-to-develop-mobile-drone-infrastructure/?utm\\_campaign=Energy%20Drone%20%26%20Robotics%20Coalition%20Content&utm\\_medium=email&\\_hsmi=113801048&\\_hsenc=p2ANqtz--sZKWG4UqDahDLRr-003kXX53AJ9xzASmLZ2Gx8zLdgRaRswkXlJ0qjjaKled4-zRfx\\_AYlgDadgEow6nGqpLQ1aUqw&utm\\_content=113801048&utm\\_source=hs\\_email](https://www.commercialdroneprofessional.com/dronehub-secures-nearly-2m-to-develop-mobile-drone-infrastructure/?utm_campaign=Energy%20Drone%20%26%20Robotics%20Coalition%20Content&utm_medium=email&_hsmi=113801048&_hsenc=p2ANqtz--sZKWG4UqDahDLRr-003kXX53AJ9xzASmLZ2Gx8zLdgRaRswkXlJ0qjjaKled4-zRfx_AYlgDadgEow6nGqpLQ1aUqw&utm_content=113801048&utm_source=hs_email)

### **eVTOL air taxis ‘must be much safer than cars’** [HEADLINE NEWS](#) [JOE PESKETT](#) MARCH 3, 2021



Early eVTOL passenger craft that are used in commercial operations should have safety records equal to those in the commercial aviation sector to prevent accidents and fatalities. That is according to the boss of Horizon Aircraft, which has developed the Cavorite X5 eVTOL aircraft and was recently acquired by Astro Aerospace.



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The company's CEO said the global spotlight on the first air taxis will be sufficiently intense that any accidents and safety risks would set the industry back years in terms of passenger confidence and regulatory approval. Brandon Robinson said: "There is much debate around the safety requirements of eVTOL aircraft, with some commentators for example, saying they should be twice as safe as driving a car, or have safety records on a par with helicopters.

The Horizon Aircraft Cavorite X5 is fundamentally a normal aircraft with an additional eVTOL capability that adds safety and operational capability. Flying 98% of its mission in a configuration exactly like a normal aircraft means discussions surrounding certification can start from a well-understood baseline. This greatly reduces risk during the process, the company said. <https://www.commercialdroneprofessional.com/evtol-air-taxis-must-be-much-safer-than-cars/>

### **Advancing Bridge Inspection** CHARLES CHOI MARCH 2, 2021 AIR, IUS EXCLUSIVE



Increasingly, drones are overcoming major technical challenges to help inspect bridges, work that may ultimately help prevent catastrophic failures.

"We have a major infrastructure problem in this country right now and being able to recognize and remediate any risk this poses will be vital," said Jeffery Alholm, CEO of Lenexa, Kansas-based drone startup Digital Aerolus. When it comes to bridge inspections, drones offer the chance to reduce costs, speed review, provide better data and improve worker safety. "There are over 614,000 bridges in the U.S.," Alholm said.

The primary piece of equipment currently used to inspect bridges is a "snooper truck"—an inspection vehicle that uses buckets or platforms on booms to lower workers under bridges. Each one may cost \$200,000 to \$500,000 and require a large crew to operate. "If mishandled in any way, the snooper truck can tip over," said Adam Bry, CEO of Redwood City, California-based drone startup Skydio. In other cases, inspections may involve workers rappelling on ropes from bridges.

"Compared to rappelling, or a many-ton piece of machinery, a small light drone seems safer and more efficient," Bry said. <https://insideunmannedsystems.com/advancing%E2%80%A8-bridge-inspection/>

### **Researchers introduce a new generation of tiny, agile drones** 2021-03-03

If you've ever swatted a mosquito away from your face, only to have it return again (and again and again), you know that insects can be remarkably acrobatic and resilient in flight. Those traits help them navigate the aerial world, with all its wind gusts, obstacles, and general



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uncertainty. Such traits are also hard to build into flying robots, but MIT Assistant Professor Kevin Yufeng Chen has built a system that approaches insects' agility.



Chen, a member of the Department of Electrical Engineering and Computer Science and the Research Laboratory of Electronics, has developed insect-sized drones with unprecedented dexterity and resilience. The aerial robots are powered by **a new class of soft actuator**, which allows them to withstand the physical travails of real-world flight. Chen hopes the robots could one day aid humans by pollinating crops or performing machinery inspections in cramped spaces. Chen's work appears this month in the journal *IEEE Transactions on Robotics*.

According to Chen, "The challenge of building small aerial robots is immense. Pint-sized drones require a fundamentally different construction from larger ones." Chen designed a more resilient tiny drone using soft actuators instead of hard, fragile ones. The soft actuators are made of thin rubber cylinders coated in carbon nanotubes. When voltage is applied to the carbon nanotubes, they produce an electrostatic force that squeezes and elongates the rubber cylinder. Repeated elongation and contraction cause the drone's wings to beat — fast.

[https://www.uavexpertnews.com/2021/03/researchers-introduce-a-new-generation-of-tiny-agile-drones/?utm\\_source=Master&utm\\_campaign=8734687b38-EMAIL\\_CAMPAIGN\\_2017\\_12\\_20\\_COPY\\_01&utm\\_medium=email&utm\\_term=0\\_35ad7bc94d-8734687b38-89168672](https://www.uavexpertnews.com/2021/03/researchers-introduce-a-new-generation-of-tiny-agile-drones/?utm_source=Master&utm_campaign=8734687b38-EMAIL_CAMPAIGN_2017_12_20_COPY_01&utm_medium=email&utm_term=0_35ad7bc94d-8734687b38-89168672)

## **Volocopter Raises €200 Million in Series D Funding Round** March 3, 2021 News



Volocopter, the pioneer of urban air mobility, announced the signing of their Series D funding round today, raising €200 million in additional capital. Cumulatively, Volocopter has raised **€322 million**. The funding will be used to solidify Volocopter's leading position in the market by bringing the VoloCity, the battery-powered air taxi for cities, to certification and by accelerating the

launch of its first commercial routes.

As the first and only electric vertical take-off and landing company to receive Design Organisation Approval by the European Union Aviation Safety Agency, Volocopter expects its first commercial air taxi routes to be opened **within the next two years**.

New investors include funds managed by BlackRock, global infrastructure company Atlantia S.p.A., Avala Capital, mobility technology giant Continental AG, global technology focused investment fund Jericho Capital, global technology and business solutions provider NTT via its venture capital arm, Tokyo Century, a leading Japanese leasing company, leading family offices, and others. All existing investors, including Geely, Daimler, DB Schenker, Intel Capital, btov



## UAS and SmallSat Weekly News

Partners, Team Europe, and Klocke Holding amongst others also joined the round.

[https://uasweekly.com/2021/03/03/volocopter-raises-e200-million-in-series-d-funding-round/?utm\\_source=rss&utm\\_medium=rss&utm\\_campaign=volocopter-raises-e200-million-in-series-d-funding-round&utm\\_term=2021-03-03](https://uasweekly.com/2021/03/03/volocopter-raises-e200-million-in-series-d-funding-round/?utm_source=rss&utm_medium=rss&utm_campaign=volocopter-raises-e200-million-in-series-d-funding-round&utm_term=2021-03-03)

**ideaForge raises \$2 million thanks to venture debt firm BlackSoil** Josh Spires Mar. 3rd 2021



[Indian drone manufacturer](#) ideaForge has secured \$2 million from the venture debt firm Blacksoil to complete its orders. The news comes two months after the company received funding from the Indian Army to produce a high-altitude variant of its SWITCH UAV.

If everything goes well, as it should, it will open the door for the two companies to work together in the future and allow ideaForge to continue its run as the **number-one drone manufacturer in India**.

ideaForge has a large line of custom-built drones for everything from announcements to surveillance to mapping. If you need something done by a drone, there is a good chance ideaForge can provide the right drone for the job. The company was founded in **2007**, making it one of the oldest by IIT-Bombay alumni. <https://dronedj.com/2021/03/03/ideaforge-raises-2-million-thanks-to-venture-debt-firm-blacksoil/>

**4Mar21**

**Drone Delivery of COVID Vaccines: Zipline Begins** Miriam McNabb March 03, 2021s



Yesterday, drone delivery heroes [Zipline](#) began drone delivery of COVID-19 vaccines to selected health facilities within its service area in Ghana.

“This makes Ghana the **first country in the world** to deploy drones on a national scale to deliver COVID-19 vaccines,” says the press release.

It’s a first on a number of fronts. “On 23 February, The COVAX Facility shipped 600,000 doses of the AstraZeneca/Oxford vaccine, from the Serum Institute of India from Pune, India to Accra, Ghana,” the release reports. “The arrival in Accra is the first batch delivered anywhere in the world by the COVAX Facility as part of an **unprecedented** effort to deliver at least 2 billion doses of COVID-19 vaccines to low- and middle-income countries by the end of 2021.”





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Drone delivery of COVID vaccines will help ensure rapid and equitable access of the vaccine across Ghana, even in remote areas. “Nearly half of Ghana’s population lives outside of cities, and those 12 million people are difficult to reach with time-limited, cold chain-dependent vaccines. Zipline’s network provides Ghana with a resilient, efficient and equitable distribution strategy.” <https://dronelife.com/2021/03/03/drone-delivery-of-covid-vaccines-zipline-begins/>

### SpaceX sticks 75th Falcon rocket landing after launching 60 more Starlink Satellites

March 4, 2021 Stephen Clark



Launching through a blanket of low-hanging clouds and light mist, a SpaceX Falcon 9 rocket thundered into the sky over Florida’s Space Coast early Thursday and delivered 60 more Starlink internet satellites to orbit. The rocket’s first stage touched down on SpaceX’s floating landing platform in the Atlantic Ocean to complete its **eighth trip** to space and back.

Arcing toward the northeast, the Falcon 9 exceeded the speed of sound and dropped its first stage booster about two-and-a-half minutes after liftoff. A single Merlin engine on the upper stage ignited to continue the flight into space, while the first stage descended to a propulsive landing on the drone ship “Of Course I Still Love You” positioned about 400 miles (630 kilometers) downrange from Cape Canaveral.

The successful landing marked the **75th intact recovery** of a Falcon rocket booster since December 2015. <https://spaceflightnow.com/2021/03/04/spacex-sticks-75th-falcon-rocket-landing-after-launching-60-more-starlink-satellites/>

### Drones With ‘Most Advanced AI Ever’ Coming Soon to Your Local Police Department

FEDERICO WINER FOR FORBES Thomas Brewster Forbes Staff

DAILY COVER Mar 3, 2021



Founded by Google veterans and backed by \$340 million from major VCs, Skydio is creating drones that seem straight out of science fiction—and they could end up in your neighborhood soon.

The company was founded in 2014 by ex-MIT and Google unmanned flight specialists with ambitions that go far beyond policing the borders. Skydio cofounder and CEO Adam Bry believes his company will lead the world to a place where drones don’t need a pilot, whether they’re helping police, inspecting bridges or delivering goods.

It claims to be shipping **the most advanced AI-powered drone ever built**: a quadcopter that costs as little as \$1,000, which can latch on to targets and follow them, dodging all sorts of

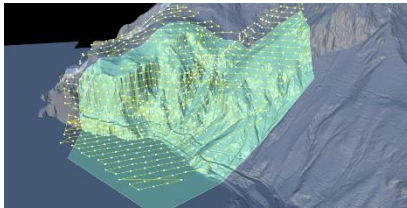


## UAS and SmallSat Weekly News

obstacles and capturing everything on high-quality video. The Skydio X2. Launching later this year, the X2 has range of up to 6 miles and a 100x zoom on its high-definition cameras.

Skydio's real advantage might simply be that it is not Chinese. The company bills itself as an all-American alternative to DJI (even if it admits that some of its plastics and metals are made in China). <https://www.forbes.com/sites/thomasbrewster/2021/03/03/drones-with-most-advanced-ai-ever-coming-soon-to-your-local-police-department/?sh=591d06f23f0b>

### Swiss Federal Railways uses drones to inspect rockslides Josh Spires Mar. 4th 2021



The [Swiss Federal Railways \(SBB\)](#) has turned to drone technology to make its lines safer and track potential rockslides before they happen. This is done with its in-house drone pilots and Drone Harmony's Hill Scan software platform.

[As a part of the SBB's ongoing maintenance](#) work, it regularly checks its rail lines as they begin to head into the mountains. This consists of looking out for potential rockslides that could destroy a passing train and kill passengers. The company used to go in on foot and manually check the location, or go in by helicopter to get a closer look.

With Hill Scan's help, the company no longer needs to put its workers in the path of a potential rockslide. Drones will now be used to scan the whole mountainside and detect any issues. The software can pinpoint the exact location that has the issue, allowing workers to go in a fix it. The map that is created by the drone tracks the number of displacement areas on the mountain, coloring them in with yellow and progressing down to a dark purple for areas with no displacement.

As the Swiss Federal Railways is using drones for many day-to-day tasks, it recently opened the Center of Competence for Drones, which oversees all its drone operations and is home to over **100 specially trained pilots, with access to a fleet of 80 drones.**

<https://dronedj.com/2021/03/04/swiss-federal-railways-uses-drones-to-inspect-rockslides/#more-51560>

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### DJI launches hybrid FPV drone onto consumer and commercial market

HEADLINE NEWS JOE PESKETT MARCH 2, 2021

DJI on Tuesday launched a new hybrid drone which is targeting both first-time amateur users and professional commercial pilots. The DJI FPV combines a first-person view, high-speed performance, cinematic camera capabilities and an optional single-handed motion controller that allows pilots to control the drone with just hand movements.



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DJI said the FPV, which it is selling for 1,249 GBP, “creates a **new drone category**”. “Right out of the box, the DJI FPV combines the best available technology for a hybrid drone like no other,” said Ferdinand Wolf, creative director, DJI Europe.

“It can fly like a racer, hover like a traditional drone, accelerate like a homebuilt project and stop faster than any of them.

The DJI FPV lets the world experience the absolute thrill of immersive drone flight without being intimidated by the technology or spending hours building a system from scratch. We can’t wait for the world to try it.” <https://www.commercialdroneprofessional.com/dji-launches-hybrid-fpv-drone-onto-consumer-and-commercial-market/>