



UAS and SmallSat Weekly News

Contents

- 2 FAA Authorizes 35 Miles of BVLOS Drone Operations for NUAIR
- 2 H3 Dynamics Completes Wind Tunnel Tests of Unmanned Hydrogen Aircraft
- 3 Zenith AeroTech, Virtex Partner to Produce Tethered Aerial Vehicles
- 4 Aquiline Drones First UAV Company in Country to Form Insurance Subsidiary
- 4 AirSeed Technologies works to plant 100 million trees by drones
- 5 SkyMagic Drone Light Show Over London Welcomes in the New Year
- 5 UNM's VolCAN team makes history in Canary Islands
- 6 Drugs by drone: Good idea?
- 7 Use drones more effectively: Civil Aviation Ministry
- 8 VillageReach: Drones are a Hero in Yellow Fever Immunization Campaign
- 8 Neuron Leverages Hedera Network for Drone Radar System
- 9 Boeing's Updated Valkyrie Reveals Evolving Hypersonic Design
- 10 CES 2022: THE BIGGEST DRONE PRODUCTS FROM THIS YEAR
- 11 Industrial Helicopter Drone Features First-Person View Capability
- 11 SoCalGas Partnership with Doosan Mobility Innovation and GTI to Launch Hydrogen Drone
- 12 Smart Shooter's SMASH technology now also in UAV configuration
- 12 Drones create lovely model of China's Shenyang Imperial Palace
- 13 Drones aid Scotland's mountain search and rescue groups
- 13 SkyDrive Flying Vehicle Revealed at CES 2022: Emission-Free, Ultra-Compact
- 14 H2 CLIPPER HYDROGEN AIRSHIP BOOSTED BY DASSAULT'S SUPPORT
- 15 General Atomics Drones with Lockheed Pod Demo Fused Sensor Data Transfer
- 15 Drone gives aerial view of 180-million-year-old UK 'sea dragon' fossil
- 16 2022 CES: THE BEST OF THIS YEAR'S DRONE DISPLAYS
- 17 Embraer's Eve and Folk sign deal for potential order of 200 eVTOLs
- 18 FlyingBasket Cargo Drone Tested for Middle Mile Delivery
- 18 DroneDeploy's State of the Drone Industry Report 2011
- 19 New Raytheon tech lets a single operator control 130 drones
- 20 Here's a drone that works both in the air and underwater
- 20 U.K. Government-Sponsored Trials Demonstrate Safe Tracking of BVLOS Drone Operations



UAS and SmallSat Weekly News

8Jan22

FAA Authorizes 35 Miles of BVLOS Drone Operations for NUAIR Jessica Reed | January 6, 2022



New York-based nonprofit NUAIR (Northeast UAS Airspace Integration Research Alliance), which manages operations at the New York UAS Test Site, received authorization this week from the Federal Aviation Administration for beyond visual line of sight (BVLOS) drone operations in 35 miles of airspace.

The designated airspace is within New York's 50-mile drone corridor that connects the cities of Rome and Syracuse, NY.

NUAIR and the Test Site were first authorized for BVLOS in 2019 in a small airspace at Griffiss International Airport in Rome, NY. Local county executive Anthony J. Picente Jr. commented on the newest authorization in a [press release this week](#), saying: "The one-of-a-kind testing, research and development that occurs here is elevating the entire industry. This latest FAA authorization will allow our 50-mile drone corridor to push the limits of what is possible."



This image shows the location of the 50-mile drone corridor in New York which reaches from Syracuse to Rome.

A ground-based surveillance system that is integrated throughout the 50-mile drone corridor allows NUAIR to monitor air traffic to quickly detect any intruder aircraft.

<https://www.aviationtoday.com/2022/01/06/faa->

[authorizes-35-miles-bvlos-drone-operations-nuair/](#)

H3 Dynamics Completes Wind Tunnel Tests of Unmanned Hydrogen Aircraft

Phoebe Grinter 05 Jan 2022

[H3 Dynamics](#)' Toulouse team has completed wind tunnel tests of a long-range unmanned **hydrogen** test aircraft in preparation for first test flights within the next 2 months.



UAS and SmallSat Weekly News



Pioneered by H3 Dynamics and ISAE-Supaero in 2018, the MERMOZ program received support from the Occitanie Region in **France** and the European Fund for Regional Development. Next phases of the Mermoz program will add small local companies from Toulouse, France, including drone maker Delair to support long-range flight operations.

In 2018, H3 Dynamics filed international patents for full-scale distributed hydrogen propulsion and refueling systems for aviation. The company has since begun development of hydrogen-electric propulsion systems from its engineering centers in **Austin and Toulouse**.

<https://www.unmannedsystemstechnology.com/2022/01/h3-dynamics-completes-wind-tunnel-tests-of-unmanned-hydrogen-aircraft/>

Zenith AeroTech, Virtex Partner to Produce Tethered Aerial Vehicles Nichols Martin

January 7, 2022



[Zenith AeroTech](#) has teamed up with **Austin**-based electronics company [Virtex Enterprises](#) to accelerate the [production of heavy-lift tethered aerial vehicles](#).

The partnership aims to address growing customer demand while meeting the National Defense Authorization Act's requirements, the **Afton, Virginia**-based TAV manufacturer said Thursday.

Zenith produces the Hexa, Quad 8 and Quadro TAVs, which differ in size, weight and power depending on the customer's need. The tethered drones are designed to support federal, military, telecommunications and first responder applications.

Meanwhile, Virtex offers system-level integration, design, life cycle management and engineering services for commercial, military and aerospace markets. The company will receive Zenith's help to engage the small unmanned aircraft systems market and capture new law enforcement and defense customers. https://blog.executivebiz.com/2022/01/zenith-aerotech-virtex-partner-to-produce-tethered-aerial-vehicles/?_wte=robert.rea%40axcel.us&utm_source=Ebiz%20Welcome%20Email&utm_medium=email&utm_campaign=ExecutiveBiz%20Daily%20Headlines%2001.07.2022%20%28SdfKLe%29&kla_id=01EN0ENFMACND181VSREZG5QN3&kx=flFBQb_oQZJUyKTHrsATtjXEZqq41jUx0eSlvjsCO0%3D.TBKKxP



UAS and SmallSat Weekly News

Aquiline Drones First UAV Company in Country to Form Insurance Subsidiary

January 7, 2022



Since 1819, Connecticut has always been called “the insurance capital of the world.” Now, one of the world’s fastest growing companies is seeking to update this classic tagline to include the word “drone” – and to then promote Connecticut as “The Drone and Insurance Capital of The World.”

Aquiline Drones Corporation (AD), a Hartford-based drone solutions provider today announced that it has successfully completed the licensing process to establish its own insurance subsidiary – Aquiline Drones Indemnity Corporation (ADIC), through the State of Connecticut Insurance Department, making AD the **first** US drone manufacturer to do so. This insurance license allows AD to assume the risk of its entire group of companies, indemnify its continuum of products and services, as well as the ability for AD to insure the risk of its partners and affiliates such as Drone Volt and Aerialtronics. ADIC will also indemnify the products utilized by AD’s supply of professional drone service providers nationwide. https://uasweekly.com/2022/01/07/aquiline-drones-first-uav-company-in-country-to-form-insurance-subsidiary/?utm_source=rss&utm_medium=rss&utm_campaign=aquiline-drones-first-uav-company-in-country-to-form-insurance-subsidiary&utm_term=2022-01-07

AirSeed Technologies works to plant 100 million trees by drones Bruce Crumley - Jan. 7th 2022



Many companies have factored measures to combat global warming into their business plans. But for Australian startup AirSeed Technologies, reducing carbon levels *is* its business plan – and one driving the company’s ambition to plant 100 million trees using drones by **2024**.

That objective sounds crazy, but [Airseed Technologies](#) executives say they’ve developed both the drone tech and seeding process to be able to get huge areas of land sewn with future trees 25 times faster and 80% cheaper than previous methods. Global deforestation has wiped out 1.3 million square kilometers of trees since 1990, or 15 billion trees annually. That results in 1.49 million tons of carbon failing to be eliminated by plant life each year.

To reverse that, the company has used its specially adapted octocopters to plant **50,000 trees thus far**, en route to its 2024 objective of 100 million.



UAS and SmallSat Weekly News

Airseed Technologies is pursuing that goal using autonomously flying drones equipped with a pneumatic device that shoots [seedballs](#) deeper into the soil than simple aerial drops. The UAV and its firing system bury two seeds in the ground per second, or a rate of 40,000 future trees planted per day compared to 800 by normal methods. The craft are programmed to fly precise grids that completely cover targeted terrain. Each pod of seeds is mapped using GPS units so germination and growth can be monitored during later flights.

<https://dronedj.com/2022/01/07/airseed-technologies-works-to-plant-100-million-trees-by-drones/>

SkyMagic Drone Light Show Over London Welcomes in the New Year Miriam

McNabb January 02, 2022



Drone light shows are more than just entertainment – they're a stunning achievement in drone fleet management, flight over people, and precise positioning. Experts [SkyMagic](#) deployed **500** aircraft to provide **the biggest drone light show London has ever seen** to ring in 2022.

SkyMagic's drone light show was performed from the Old Royal Naval College, Greenwich and over the River Thames as part of the Mayor of London New Year's Eve spectacular.

Delivering a "message of hope and positivity," says a SkyMagic press release, "London welcomed the new year with a dynamic broadcast show that took place across the city, celebrating its diverse cultural heritage..." <https://dronelife.com/2022/01/02/skymagic-drone-light-show-over-london-welcomes-in-the-new-year/>

9Jan22

UNM's VolCAN team makes history in Canary Islands Kim Delker January 05, 2022



When an interdisciplinary team from The University of New Mexico was awarded [a four-year, \\$1.5 million grant from the National Science Foundation in 2020](#), the goal was to develop novel, bio-inspired software and drones to measure and sample volcanic gases.

One year later, the [Project VolCAN](#) team got a spectacular opportunity to do just that — and make history in the process by becoming what is



UAS and SmallSat Weekly News

believed to be **one of the first** research teams **to collect uncontaminated gases from an active volcanic eruption**.

In late-November, UNM's team flew a drone into the erupting Cumbre Vieja volcano at La Palma Island in Spain's Canary Islands. The eruption, which began in September and ended in late December, is the largest in Europe in 500 years.

Since the fall, volcanic lava flows from Cumbre Vieja have destroyed more than 1,000 homes and covered significant parts of the Western side of the island with ash. The continuous emission of ash from the volcano has resulted in frequent closing of the airport, which along with high sulfur dioxide and aerosol concentrations in the air, makes for hazardous conditions. Frequent earthquakes add to the mix of nature displaying its power.

As the research team directed the autonomous drones into the gas plumes, they protected themselves from the noxious gases by donning military-grade **gas masks**. This resulted in a **treasure trove of data** to help better understand the course of the eruption.

<http://news.unm.edu/news/unms-volcan-team-makes-history-in-canary-islands>

Drugs by drone: Good idea? Greg Nichols, Contributor Robotics January 5, 2022



Drone delivery is still in the starting gate, but with [early testbeds showing positive results](#) there's good reason to suspect regulators will become more permissive in the midterm. But should delivery include controlled substances like pharmaceuticals?

It's not an idle question. Amazon and CVS have tested drone delivery for medications, though it doesn't strain the imagination to spot glaring problems. Drone regulations will only allow drones to fly in particular areas, excluding certain populations based on geography and thus hobbling one of the primary arguments for delivering drugs via drone — namely that drones can help solve for pharmacy deserts. What's more, packages delivered by drone might be tampered with or stolen, drones can be shot down, and identity authentication will be tricky. I connected with [Susan Lang](#), Founder & CEO of [XIL Health](#), a complex drug pricing analytics company, about the prospects of delivering medicine via drones.

GN: Who has trialed prescription delivery by drone, and what have been the results? Susan

Lang: CVS and UPS started in May 2020 and are using Matternet's M2 drones with



UAS and SmallSat Weekly News

authorization from the Federal Aviation Association to deliver prescription medication to residents in The Villages community in Florida.

In Ireland, the healthcare system and Irish aviation systems have allowed Manna Aero to deliver medications via drone to the elderly in Moneygall, a small Irish village. In Uganda, Johnson and Johnson is piloting a program in the Lake Victoria Kalangala District. Access to the islands is difficult, making it hard to get needed medications. The drones could offer quicker and safer transport, being more effective than boats.

Walgreens partnered with Wing, a subsidiary of Alphabet to have over-the-counter medicines and household items delivered to their backyards. There are so many different pilot programs going on, these are just a few of the public trials. Pilot programs are a chance to figure out all the ways the program can fail and fix them early on. Critical thinkers are trying to find the faults now to improve the technology sooner, giving them more potential for success.

<https://www.zdnet.com/article/drugs-by-drone-good-idea/>

Use drones more effectively: Civil Aviation Ministry S. Vijay Kumar CHENNAI JANUARY 06, 2022



In a nationwide program to take the third eye to the sky, the Ministry of Civil Aviation in India has called for more effective utilization of drone applications and urged the Ministry of Home Affairs to deploy unmanned aerial vehicles for surveillance, situational analysis, crime control, VVIP security, and disaster management.

In a note sent to at least **a dozen Ministries**, the Secretary, MoCA, Rajiv Bansal, said drones offered tremendous benefits to almost every sector of the economy, including national defense, agriculture, law enforcement, and mapping. As part of the initiatives to make India a global hub for drones under the Atmanirbhar Bharat Abhiyan and in the backdrop of the Union Government rolling out the liberalized Drone Rules 2021, he suggested the heads of various Ministries promote effective use of the technology.

The suggestions include deployment of drones for combat, communication in remote areas, and counter-drone solutions by the Ministry of Defence; and delivery of medicines, collection of samples from remote or epidemicaaffected areas by the Ministry of Health and Family Welfare.

<https://www.thehindu.com/news/national/use-drones-more-effectively-civil-aviation-ministry/article38157077.ece>



UAS and SmallSat Weekly News

10Jan22

VillageReach: Drones are a Hero in Yellow Fever Immunization Campaign

staff January 09, 2022



Provincial health officials of Equateur province in the Democratic Republic of Congo (DRC), in collaboration with the Ministry of Health and the Expanded Programme on Immunization (EPI), are leveraging an ongoing drone delivery network established in 2020. It will support a mass yellow fever immunization campaign targeting over 90% of the population, one village at a time.

Equateur province, in northeastern DRC is home to a two-way delivery network using Swoop Aero drone technology to serve remote and hard-to-reach health facilities and communities. The Provincial Ministry of Health, with the technical assistance of VillageReach and financial support from donors coming together, including GAVI, the Vaccine Alliance, and the Bill & Melinda Gates Foundation, established operations to address the medical delivery needs given the challenging terrain in the region.

Using a drone delivery network, the provincial health authorities have been distributing both routine and on-demand vaccines and other immunization products monthly for children and women in 35 hard-to-reach health areas, via 20 drone landing sites. The drones return with a broad range of products, including yellow fever and COVID-19 laboratory samples.

Other deliveries have included medical reports, and at times on-demand deliveries of personal protective equipment (PPE) in support of the COVID-19 response, as well as vaccines, medicines and contraceptives. **In the last nine months, more than 15,000 children and 5,500 pregnant women** who live in the most hard-to-reach locations have received immunization services because of the introduction of drones. <https://dronelife.com/2022/01/09/village-reach-drones-are-a-hero-in-yellow-fever-immunization-campaign/>

Neuron Leverages Hedera Network for Drone Radar System DRONELIFE Staff Writer
Ian M. Crosby January 09, 2022

Aviation technology leader [Neuron](#) has employed the [Hedera network](#), the leading enterprise-grade public ledger for the decentralized economy, in a trial sponsored by the UK government



UAS and SmallSat Weekly News

to demonstrate the ability to safely track the movements of military, enterprise, and government drones once out of visual line of sight.



Held at Port Montrose in Scotland on 29 April 2021, and at Cranfield University during October 2021, the trials employed sensors to track the drones, recording flight data via the Hedera Consensus Service.

Neuron's goal is to offer a decentralized platform for mobility solutions such as drones, air taxis, autonomous vehicles, and ground robots. It intends to achieve this by connecting sensors, vehicles, and

management systems to form a trusted network that can be used for data sharing, record keeping and decision making.

Neuron CCO Niall Greenwood said, "Each flight creates millions of data points, which no other public ledger has been fast enough to log and correctly order. By leveraging the Hedera Consensus Service we can gather, store, and order this data immediately, giving us a real time 'radar system' for drones."

Neuron sensors monitor each drone's location and direction. The Hedera Consensus Service then records the data from each drone flight on Hedera's decentralized public ledger. Sponsored by the UK government's department for Business, Energy and Industrial Strategy, the trial was held as part of a series of tests to explore drone applications. Neuron's trial succeeded in **tracking drone flights once out of sight**, enabling the drones to fly longer distances safely and securely. <https://dronelife.com/2022/01/09/neuron-leverages-hedera-network-for-drone-radar-system/>

Boeing's Updated Valkyrie Reveals Evolving Hypersonic Design Jan. 7, 2022 John A. Tirpak



Shown in an artist's concept illustration provided to *Air Force Magazine*—and in the form of a model at this week's American Institute of Aeronautics and Astronautics meeting in San Diego—the aircraft shows several design departures and revisions from Boeing's previous concept, made public in 2018. The previous iteration showed an aircraft shaped much like the 1980s National Aero-Space Plane concept, with a pointed nose,

deep spine, and "2-D" rectangular intakes co-located under the fuselage. The new version shows more of a "waverider" shape with a blunt nose, flattened top, and rounded, separated



UAS and SmallSat Weekly News

intakes running the length of the aircraft to twin booms with nozzles apparently using aerospoke technology.

Boeing provided a comment about the design to *Air Force Magazine*, saying that “over the past several years, we have advanced our vehicle design concepts, developed innovative integration solutions, and matured enabling technologies in the challenging areas such as propulsion, thermal, materials, guidance, navigation and control, and engine/airframe integration.”

<https://www.airforcemag.com/boeing-updated-valkyrie-reveals-evolving-hypersonic-design/>

CES 2022: THE BIGGEST DRONE PRODUCTS FROM THIS YEAR January 7, 2022 Sally French News



CES 2022 gave us multiple new drones, or at least served as the public debut of the physical models that had been previously announced. Here are among the biggest drones that were either announced or modeled in real life.

Skydio 2+ drone



The California-based drone company used CES to announce a new and improved version dubbed the [Skydio 2+](#). Among its best highlights are longer battery life (27 minutes, which is a 20% increase from the earlier Skydio 2 model), greater range with the Beacon (3 km — up from its old ability to extend the range by 1.5 km), and improved camera software.

Sony Airpeak S1 professional drone and Sony Gremsy gimbal T3



The highly anticipated [Sony Airpeak S1 drone](#) is now in stock after much anticipation ever since it was [announced at last year's CES 2021](#). It is designed for professional photographers and videographers. At the moment, the Sony Airpeak S1 is the world's smallest drone capable of being equipped with a full-size, mirrorless, interchangeable-lens Alpha camera.

Autel Dragonfish



The company modeled its Dragonfish drone over the past week, which is notably for its unique tilt-rotor design. This drone is pretty intriguing for



UAS and SmallSat Weekly News

users flying in rough conditions, as it is both modular and waterproof. This quadcopter can fly for an incredible 180 minutes and can capture 4K video and 50x optical zoom at a range of over 18 miles. <https://www.thedronegirl.com/2022/01/10/ces-2022-drones-autel-sony-skydio/>

Industrial Helicopter Drone Features First-Person View Capability Mike Ball / 09 Jan 2022



[Ziyan UAS](#) has introduced a new helicopter UAV (unmanned aerial vehicle) designed to serve a wide range of industrial applications. The Falcon A1C includes a dual control video link system, precision piloting, and an active anti-jamming positioning system. It can also be operated with Ziyan's First Person View drone service.

The Falcon A1C is ideal for a wide range of industrial missions, including delivery to vessels and offshore platforms, inspection of wind turbines and infrastructure, and monitoring of fisheries. <https://www.unmannedsystemstechnology.com/2022/01/industrial-helicopter-drone-features-first-person-view-capability/>

SoCalGas Partnership with Doosan Mobility Innovation and GTI to Launch Hydrogen Drone January 10, 2022 News



[Southern California Gas Co.](#) (SoCalGas) today joined [Doosan Mobility Innovation](#) (DMI) and [GTI](#) at the CES Las Vegas summit to announce their partnership in launching DMI's first-of-its-kind hydrogen drone technology. With the support of SoCalGas and GTI, DMI will be demonstrating their DS30 drone system which offers the best fuel cell powerpack performance of **120 minutes of flight time and 11 pounds payload**. Powered by hydrogen, the DS30 can monitor a 1-mile-long pipeline in a single flight.

SoCalGas plans to use the DS30 drone to assist with **natural gas pipeline inspections**. The DS30 demonstration will provide close-up digital photography for locations that are difficult or hazardous to access and provide imagery for aerial mapping and three-dimensional topographic models which allow for deeper insight on terrains surrounding the utility's operations. Additionally, the drone system can provide a video record of pipeline routes, construction sites, open trenches, and working conditions. . https://uasweekly.com/2022/01/10/socalgas-announces-partnership-with-doosan-mobility-innovation-and-gti-to-launch-hydrogen-drone-demonstration/?utm_source=rss&utm_medium=rss&utm_campaign=socalgas-announces-



UAS and SmallSat Weekly News

[partnership-with-doosan-mobility-innovation-and-gti-to-launch-hydrogen-drone-demonstration&utm_term=2022-01-10](#)

Smart Shooter's SMASH technology now also in UAV configuration Dragon January 10, 2022 News



SMASH Dragon is a robotic weaponry payload that can be mounted on unmanned aerial platforms. It can incorporate various types of assault rifles, sniper rifles, 40mm, and other ammunition with precision. Lightweight, allowing mission endurance, SMASH Dragon integrates a stabilization concept

with the SMASH technology that enables the system to accurately hit static and moving targets while flying.

Featuring SMASH's proprietary target acquisition and tracking algorithms as well as computer vision capabilities, the remotely operated Dragon offers fast and precise hit capabilities while engaging targets from the air. https://uasweekly.com/2022/01/10/smart-shooters-smash-technology-now-also-in-uav-configuration-the-company-reveals-the-smash-dragon/?utm_source=rss&utm_medium=rss&utm_campaign=smart-shooters-smash-technology-now-also-in-uav-configuration-the-company-reveals-the-smash-dragon&utm_term=2022-01-10

Drones create lovely model of China's Shenyang Imperial Palace David MacQuarrie - Jan. 10th 2022



Maybe someday we'll have great 3D models of every interesting building. But this model of a UNESCO World Heritage Site in China's Liaoning Province is a lovely addition to the growing library. If you can't physically visit the Shenyang Imperial Palace, admire this drone 3D model of a Chinese treasure.

After the Forbidden City in Beijing, Qing dynasty buildings don't get much older than this. After nearly 400 years, Chinese restorers have kept the buildings looking almost new. Chief among the delights is Dazheng Hall where major religious ceremonies were once performed.

More than 4,000 drone photos of the hall were taken and converted into a 3D model. It's precision work. The details are down to the one-centimeter level. And the color is preserved as well. See the model: <https://dronedj.com/2022/01/10/drones-create-lovely-model-of-chinas-shenyang-imperial-palace/>



UAS and SmallSat Weekly News

Drones aid Scotland's mountain search and rescue groups Bruce Crumley Jan. 10th 2022



Scotland boasts some of the most gorgeous and wildest natural landscapes the planet, but also some of the easiest for visitors to get lost or stranded. Scotland's mountain rescue teams are increasingly turning to drones to locate climbers gone astray and get them out of trouble more rapidly.

Though Ben Nevis is the highest and most storied mountain in Scotland (and, at 4,413 feet, tallest in the UK), the nation has more than 280 peaks over 3,000 feet. But those remote and rugged locales can become traps for the countless people who climb them every year, and when they do, Scottish volunteer mountain rescue teams go into action. But because time is of the essence, organizations leading those efforts have been increasingly turning to drones to find missing climbers and identify the safest and fastest ways of getting them out of dangerous jams.

Heading that aerial charge is Search and Rescue Aerial Association – Scotland which began using drones in 2017. In addition to its own deployment of the craft – using a fleet of six UAVs – SAARA has also trained pilots in eight of the total 28 member groups in the Scottish Mountain Rescue organization.

The craft can cover distances faster than humans navigating rugged terrain – and even scour areas for lost climbers more rapidly than dogs. They can hover over or around dangerous or inaccessible places for people to reach and fly in closer to stranded or injured individuals than helicopters (at a far lower cost than choppers). <https://dronedj.com/2022/01/10/drones-aid-scotlands-mountain-search-and-rescue-groups/>

11Jan22

SkyDrive Flying Vehicle Revealed at CES 2022: Emission-Free, Ultra-Compact

Miriam McNabb January 10, 2022 by DRONELIFE Staff Writer Ian M. Crosby



Tokyo-based aero tech startup [SkyDrive](https://skydrive.co.jp/) has revealed its Model SD-03, an ultra-light and compact flying vehicle that recently completed testing for piloted flight. An SD-05 model is actively being developed, and is under consideration for use as an air taxi

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



UAS and SmallSat Weekly News

for the World Expo 2025 in Osaka. Having recently advanced toward commercialization with the Japanese transportation ministry's acceptance of its type certificate application, SkyDrive is **the first and only** flying vehicle developer to meet this milestone **in Japan to date**.

"The SD-03 model is the culmination of our expertise in drone technologies and aerodynamic engineering," said SkyDrive COO Takehiro Sato. "What we want to see in the future is SkyDrive's emission-free vehicles take off from and land in your parking lot and helipads atop buildings, making door-to-door air travel a realistic choice of daily urban transportation. We are working harder and faster than ever to make this once-in-a-century mobility revolution a reality." <https://dronelife.com/2022/01/10/skydrive-flying-vehicle-revealed-at-ces-2022-emission-free-ultra-compact/>

H2 CLIPPER HYDROGEN AIRSHIP BOOSTED BY DASSAULT'S SUPPORT CHARLES ALCOCK DECEMBER 16, 2021



H2 Clipper's plans to bring a hydrogen-powered airship to market received a boost this week when Dassault Systèmes selected the California-based start-up to join its 3DExperience Lab accelerator program. The company's planned design is intended to transport freight, including hydrogen

supplies for other users, in a way that it says will be between **seven and 10 times faster** than shipment via ship or truck and with **70 percent savings** compared with the cost of using existing cargo aircraft.

The proposed H2 Clipper airship is expected to have **a range of 6,000 miles** at speeds of 175 mph and a vast cargo volume of 265,000 cubic feet. According to the company, its operating costs will be between 17 and 25 cents per ton-mile, based on payloads of 245 tons over 1,000 miles or 170 tons over 6,000 miles. Total lifting capacity is expected to be over 250 tons, with the range to payload ratio being driven by the quantity of fuel required for the desired flight distance.

The H2 Clipper team says that it expects to complete a detailed design and have a 40 percent sub-scale prototype ready to **start flight testing in 2024**, subject to sufficient funds being raised to support this work. Its objective is to have the first full-sized model **flying in 2027**, but it has not yet indicated when it aims to have the as-yet-unnamed airship certified for commercial service. <https://www.futureflight.aero/news-article/2021-12-15/h2-clipper-hydrogen-airship-boosted-dassaults-support>



UAS and SmallSat Weekly News

General Atomics Drones with Lockheed Pod Demo Fused Sensor Data Transfer

Nichols Martin January 11, 2022



Unmanned aircraft systems made by [General Atomics](#) demonstrated collaborative sensing with a [Lockheed Martin](#) sensor within a two-hour flight.

General Atomics said Monday it deployed two Avenger UAS that used [Lockheed's Legion Pod](#) to passively gather data on long-range air threats then transmitted the input to a ground-based command center. The Legion Pod [is designed to support collaborative targeting](#) in scenarios denied of radar support.

The Avenger units flew over southern California's high desert and used the pod's infrared system to detect and track fast aircraft in the area. Lockheed's fusion software combined the data gathered by both pods before transmission to the command station.

"This is the first time IRST systems on multiple autonomous aircraft have delivered **merged air threat data** to users on the ground," said Scott Roberson, director of sensors and global sustainment advanced programs at Lockheed. https://blog.executivebiz.com/2022/01/general-atomics-drones-with-lockheed-pod-demo-fused-sensor-data-transfer/?wte=robert.rea%40axcel.us&utm_source=Ebiz%20Welcome%20Email&utm_medium=email&utm_campaign=ExecutiveBiz%20Daily%20Headlines%2001.11.2022%20%28VgzLdF%29&kla_id=01EN0ENFMACND181VSREZG5QN3&kx=fLFBQb_oQZJUyKTHrsATtjXEZqq41jUx0eSlvjsCO0%3D.TBKKxP

Drone gives aerial view of 180-million-year-old UK 'sea dragon' fossil Bruce

Crumley - Jan. 11th 2022



[According](#) to Anglian Water, which owns and operates the Rutland Water Nature Reserve where the discovery was made, the remains **represent the largest ichthyosaur ever discovered in Britain**, measuring some **10 meters** in length. Following a nearly year-long study and excavation effort to unearth the Jurassic-era marine creature,

a recent drone shot of Rutland Water Nature Reserve's conservation team leader, Joe Davis, lying beside his fossilized UK find offered a better understanding of just how big the so-called "sea dragon" was.



UAS and SmallSat Weekly News

[Ichthyosaurs](#) (or *Temnodontosaurus trigonodont*) were warm-blooded, air-breathing marine reptiles that, astonishingly, could vary in size from one to over 25 meters (making the one Davis happened across during a routine drain of the reservoir a rather modest-sized individual. Those aquatic predators bore a general resemblance to dolphins, but would have enjoyed a far less endearing reputation, being formidable predators as they were.

They are thought to have appeared on earth 250 million years ago, going extinct roughly 160 million years later. <https://dronedj.com/2022/01/11/drone-gives-aerial-view-of-180-million-year-old-uk-sea-dragon-fossil/>

12Jan22

2022 CES: THE BEST OF THIS YEAR'S DRONE DISPLAYS January 10, 2022 [Sally French](#)



While attendance at the 2022 CES conference in Vegas was predictably light, that doesn't mean this year's show was any less impressive. But this year, perhaps more than ever, is a time when the drone industry dominated. We got a load of [new drones](#) on display or revealed for the first time, including products from Autel, Skydio and Sony. We got an epic, in-person [drone race on the Las Vegas Strip](#). We saw female drone industry leaders get well-deserved recognition at the [2021 Women To Watch awards](#).



The Autel display was large this year, in part because Autel had a ton of drones to show off. Those UAVs included the Autel EVO Nano and EVO Lite drones, which are available now for purchase from [Amazon](#) and [Adorama](#).

Photo by Ethan Miller/Getty Images



Here was a rather unique (and pricy) product. The VETAL vertical takeoff and landing drone by HiveGround is a twin-rotor drone featuring the ability to swap out payloads and a magnetic battery. It retails for **\$20,000**.

Photo by Ethan Miller/Getty Images



UAS and SmallSat Weekly News



Even pricier is the **\$20,000** Doosan Mobility Innovation DS30W hydrogen fuel cell drone. This drone can fly for two hours, which can be useful for public safety and mapping large areas via Lidar. Photo by Ethan Miller/Getty Images

One of the most special events at 2022 CES was the [DRL Algorand World Championship Season 2021-22 finale](https://www.drl.com/2022/01/12/2022-ces-photos/). This epic, outdoor drone race from the Drone Racing League was held just outside T-Mobile arena on the Vegas strip. <https://www.thedronegirl.com/2022/01/12/2022-ces-photos/>

Embraer's Eve and Folk sign deal for potential order of 200 eVTOLs 12th January 2022 VYTE KLISAUSKAITE



Embraer's electric taxi firm Eve and regional aircraft lessor Folk have signed a Letter of Intent (LoI) for a potential order of **200** electric vertical take-off and landing vehicles (eVTOL).

The LoI between the two companies also includes a commercial partnership to develop **a global network** of eVTOL operators in support of Urban Air Mobility missions.

"We firmly believe in the prospects of the eVTOL market and that Eve, with the support of Embraer's experience in the manufacturing, certification and support of aircraft, will be a market leader," said Jeremy Barnes, CEO of Falko.

Embraer's eVTOL will be 100% electric and have space for one pilot, four passengers, and their luggage.

Earlier in 2021, Lessor Azorra and carrier Republic Airways signed a LoI to order up to **200** eVTOL aircraft each, while Skywest signed a Memorandum of Understanding and a LoI for **100** aircraft. <https://www.aerotime.aero/29928-embraer-eve-and-folk-sign-loi-for-order-of-200-evtols>



UAS and SmallSat Weekly News

13Jan22

FlyingBasket Cargo Drone Tested for Middle Mile Delivery YULIYA KLOCHAN JANUARY 11, 2022



Italy-based Leonardo, the aerospace, defense and security company; FlyingBasket, a cargo drone designer, producer and operator; and Poste Italiane, Italy's postal service provider, recently collaborated on a first phase of drone-based delivery tests in Turin.

The trials are the next step towards a new, more sustainable model of air transport logistics, where heavy goods can be transported aurally across densely populated areas, operated remotely BVLOS.

The series of tests, part of the "Sumeri Moderni" trials, focused on "middle mile delivery"—from a warehouse or distribution center to retail locations. The aircraft used was the electric FB3 VTOL cargo drone built and operated by Italian start-up FlyingBasket, which can carry up to 100 kilograms (220.5 pounds) and release its load via cable, enabling operation in areas that do not have dedicated landing infrastructure.

During the tests, the remotely piloted BVLOS cargo drones flew routes of 15–50 kilometers (9.3–31.1 miles). They carried heavy loads over urban areas of varying population densities—typical logistical requirements of middle mile delivery. This offers the potential to reduce consumer product delivery times and road congestion with an environmentally friendly approach. https://insideunmannedsystems.com/flyingbasket-cargo-drone-tested-for-middle-mile-delivery/?mkt_tok=NzU2LUZXSi0wNjEAAAGB88keqcmPXRkKqfC842RowAFsQATgKYq4zUChIZw8_AANnR76cz_3MICK37X0bylVTh7f9estckODx_QDEcMx0G3Q4hC-Nw7AADRdj8hoxF4

DroneDeploy's State of the Drone Industry Report 2011





UAS and SmallSat Weekly News

750+ respondents. 20+ industries. 40+ countries. What this year's drone and robotics trends mean for your industry. [Download Now file download](#)

While 2020 was a year of widespread uncertainty for industries at-large, 2021 saw many of these sectors continuing to adapt and retool their operations to help mitigate the pandemic's ongoing impact. Operational shifts that may have been seen as "temporary" in March of 2020 are now the new norm, and "business as usual" may never look like it did a year ago.

In DroneDeploy's 2022 State of the Drone Industry findings, we can see a few trends emerge at-length regarding the future of construction, energy, agriculture, and other key industries. From our results, it's clear that companies are turning to digital twins, drones, robotics, and automation technologies now more than ever – and reaping the benefits. Across the more than 750+ customers surveyed in 20+ industries and 40+ countries, one finding stands out as universal: digital reality capture is critical for the future of any business.

https://www.dronedeploy.com/resources/ebooks/state-of-the-drone-industry-report-2022/?mkt_tok=MzMwLUUpaWC03NDQAAAGB83-qdnpJMmJJh6VmJyC20VfLkfnriVq-Gh0HA3C0vzzekt_cl-acHDIhSkiHmQ2VdJIUVXqK5UJyoSzxFpc5ohxFtyDBbQqs3cPsGCYhjdU

New Raytheon tech lets a single operator control 130 drones Bruce Crumley - Jan. 13th 2022



Raytheon Intelligence and Space subsidiary Raytheon BBN [created](#) the tech permitting an individual or small group to operate 130 physical drones and 30 simulated UAVs in indoor and outdoor urban environments. The innovation was demonstrated at the US Defense Advanced Research Projects Agency's

fifth OFFensive Swarm-Enabled Tactics program, which showcases ways of deploying [multiple drones](#) in unified missions. The Raytheon BBN tech not only caught attention for its ability to enable one person to control over 100 craft at once, but also its simplified approach in doing that.

The group figured out a way for the system to determine how drones in a swarm should be individually assigned, then get them working together so wider mission targets can be fulfilled most effectively. Once the craft are in the air and performing their mutually agreed assignments, the system will also look for and detect where gaps may exist towards fulfilling the broader mission and reassign UAVs to fill those.



UAS and SmallSat Weekly News

Meanwhile, project researchers also created a way of using images in camera feeds to create a virtual reality interface of the wider environment in which craft are operating. That capacity can allow the operator to virtually test the feasibility of additional assignments for drones in the swarm, and – thanks to immediate execution afforded by a speech interface – send them off to work on those. <https://dronedj.com/2022/01/13/new-raytheon-tech-lets-a-single-operator-control-130-drones/>

Here's a drone that works both in the air and underwater Ishveena Singh Jan. 13th 2022



The world's first sea-to-air drone is a [collaborative effort](#) between three Asian firms: Japanese telecommunications operator KDDI, commercial drone manufacturer PRODRONE, and underwater robotics company QYSEA. It aims to make detailed underwater inspection and surveillance work

possible without the need for ships or personnel. The Sea-Air Integrated Drone is a combination of a heavy-duty aerial drone and QYSEA's industrial-class FIFISH PRO V6 PLUS ROV. It has been in the making for **six years**.

The drone leverages long-range mobile communications to fly to its preset route at sea. After landing at its designated location, the underwater drone is released and deployed to work. The pilot is then able to remotely operate the ROV from a safe working location and perform a variety of inspection, maintenance, and repair work underwater.

This workflow is a significant improvement over traditional underwater inspection methods where workers use boats to drive out to offshore platforms and make multiple dives for their mission. <https://dronedj.com/2022/01/13/sea-air-underwater-drone/>

U.K. Government-Sponsored Trials Demonstrate Safe Tracking of BVLOS Drone Operations Jessica Reed | January 13, 2022

Aviation technology company Neuron performed a set of drone trials sponsored by the Department for Business, Energy and Industrial Strategy of the U.K. Government. These trials were performed in Scotland in April and October 2021 and involved using the Hedera network to record flight data collected from sensors tracking the drones. The aim was to demonstrate the ability to track drone movements beyond visual line of sight while ensuring safety.



UAS and SmallSat Weekly News



Hedera's contribution, the Hedera Consensus Service, is a decentralized public ledger that collects data, including time-stamping, from the drone flights.

Neuron's eventual goal is to create a decentralized platform for various mobility solutions from drones and air taxis to autonomous vehicles and ground robots. "We've been building this product for the last couple of years,"

said Niall Greenwood, CCO of Neuron. "We are now progressing a number of larger trials with larger partners, under the Future Flight Challenge. We're partnered with three of the partners globally including Atkins, the professional services provider, and Cirium, the aviation data provider." The trials Neuron conducts will demonstrate different aspects of future flight and advanced air mobility for both unmanned aircraft and eVTOLs.

When asked about targeted end-users and applications, Greenwood explained that the service is provided for drone operators. "To characterize the situation now, aviation is pretty much broken. Unmanned aircraft, particularly drones, must fly within visual line of sight, which is hugely limiting. Our technology allows pilots to fly to the limits of the aircraft's capability."

https://www.aviationtoday.com/2022/01/13/u-k-government-sponsored-trials-demonstrate-safe-tracking-bvlos-drone-operations/?oly_enc_id=7021F0632090D7B