



UAS and SmallSat Weekly News

Contents

- 2 American drone company, Skyfish, emerges from stealth mode
- 2 NOAA Awards Black Swift Technologies Contract to Develop GPS-Denied Navigation
- 3 UK Airport Consortium Develops Drone Delivery Network in Scotland
- 4 ANRA Providing Airspace Management for European Union Urban Air Mobility Project
- 5 EHang joins EU's AMU-LED project to demo Urban Air Mobility
- 5 FAA's BEYOND drone initiative welcomes new partners
- 6 UK drone delivery service to assist overstretched NHS in COVID fight
- 7 Robot boats and drones will test Outer Banks oyster beds for water pollution
- 7 Britain pushes ahead with plans for first fighter drone
- 8 The Ban on Chinese and "Foreign Entity" UAS Expanded
- 8 SpaceX smashes record with launch of 143 small satellites
- 9 Methane measurements at Fluxys Belgium with a UAV
- 10 COVID Humanitarian UAS Operation Concludes Delivery Test in Syracuse
- 11 **Quantum communication network** goes long with help of drones
- 12 Wingcopter raises \$22 million in funding round to expand into North America
- 12 CAELUS Project Will Help the NHS Deliver Better Healthcare and Advance Drone Delivery
- 13 Forest Fire Monitoring with Drones and Wind Sensors
- 14 SpaceX adds laser crosslinks to polar Starlink satellites
- 14 Advanced Air Mobility: Air Taxis, Cargo Shuttles Predicted to Create More than 280,000 Jobs
- 15 SKYDIO JOINS FAA BEYOND PROGRAM —COULD PLAY A KEY ROLE IN FUTURE DRONE REGULATION
- 16 UK consortium to develop remote operating center for complex drone missions
- 17 Walmart to begin drone delivery pilot this summer
- 17 This Could Be the Future of Hypersonic Flight
- 18 Check out this "rhomboidal" drone wing design
- 19 US Made Tethered Drone: Zenith AeroTech Integrates Everything You Need on the Quad 8
- 19 NOAA Awards Black Swift Technologies Contract for GPS-Denied Navigation for Drones
- 20 Air taxi service Joby Aero Inc. may go public: Reuters
- 20 World-first electric Urban Air Port® secures UK government backing
- 21 Boeing venture announces world first AI-powered cybersecurity for drones



UAS and SmallSat Weekly News

23Jan2021

American drone company, Skyfish, emerges from stealth mode 2021-01-21 UAV Expert News



Today, Skyfish announced the formal launch of their advanced autonomous work drone platform. This includes work drones, Skyfish M4 and Skyfish M6, a long-lasting battery system and a unique ruggedized remote controller.

Skyfish is particularly proud of the work they've done in the cellular tower industry. "We've designed a state-of-the-art drone system for inspecting and scanning cell towers, and with our partner, Bentley Systems, we produce the best 3D reality model results in the world today," said Dr. Orest Pilskalns, CEO of Skyfish.

The Skyfish M4 is designed for **photogrammetry** and the creation of high-fidelity 3D reality models for **engineering grade inspection and measurement** of critical infrastructure, including cell towers, bridges, hydro electric dams, roadways, railways, power lines, wind turbines, oil rigs, gas refineries and cooling towers.

The Skyfish M6 drone is designed specifically for heavier payloads and environment-aware robotic interactions. For example, the M6 can carry **12 lbs for over 30 minutes** and **trigger BVLOS mechanical actions up to 5 miles away**.

Both the Skyfish M4 and M6 can support a variety of payloads, including electro-optical, thermal, methane detection, LiDAR, and can integrate with most any custom payload requirement(s). https://www.uavexpertnews.com/2021/01/american-drone-company-skyfish-emerges-from-stealth-mode/?utm_source=Master&utm_campaign=6ad1014839-EMAIL_CAMPAIGN_2017_12_20_COPY_01&utm_medium=email&utm_term=0_35ad7bc94d-6ad1014839-89168288

NOAA Awards Black Swift Technologies Contract to Develop GPS-Denied Navigation 2021-01-20 UAV Expert News



Boulder, CO – (January 18, 2021) – With nearly 95,000 miles of domestic coastline, NOAA's National Geodetic Survey faces a daunting task. Under current FAA regulations, unmanned aircraft system operators are required to keep their aircraft within visual line



UAS and SmallSat Weekly News

of sight, making coastline surveys time-consuming and arduous. To address this challenge, NOAA has selected Black Swift Technologies to develop commercially viable technology enabling GPS-denied navigation of UAS. GPS is subject to jamming and spoofing, along with on-board failure or poor signal quality in locations such as urban canyons, at high latitudes or high altitudes.

BST aims to provide a secondary navigation option through their diverse-source global positioning system that will provide accurate position updates to UAS in GPS denied areas through **augmented sensor suites and advanced machine learning** capabilities. This will be performed through the weighted fusion of machine vision algorithms with the localization of the vehicle using triangulated signals of opportunity—essentially everything emitted within a set of frequencies from a non-moving source. https://www.uavexpertnews.com/2021/01/noaa-awards-black-swift-technologies-contract-to-develop-gps-denied-navigation/?utm_source=Master&utm_campaign=6ad1014839-EMAIL_CAMPAIGN_2017_12_20_COPY_01&utm_medium=email&utm_term=0_35ad7bc94d-6ad1014839-89168288

UK Airport Consortium Develops Drone Delivery Network in Scotland Jason

Reagan January 21, 2021



One of the UK's largest airport agencies is leading the development of Scotland's **first** drone delivery network to transport medicine, blood and organs. AGS Airports, which owns and manages Aberdeen, Glasgow and Southampton airports, is leading a consortium

of 14 groups including the University of Strathclyde and air traffic control provider NATS.

Dubbed CAELUS (Care & Equity – Healthcare Logistics UAS Scotland), the project snagged **\$2 million** from the UK Industrial Strategy Future Flight Challenge Fund with a focus on autonomous drone delivery to rural areas of Scotland.

“A key aspect of the project will be designing pathways to ensure the drones can safely share airspace with civil aviation,” an AGS spokesperson said. “The project will also ensure that public safety, security and noise levels are considered.”

Scheduled to operate though spring 2022, the project will create a digital blueprint of a drone delivery network to connect hospitals, pathology laboratories, distribution centers and medical



UAS and SmallSat Weekly News

practices across Scotland. “This project has the potential to **completely revolutionize** the way in which healthcare services are delivered in Scotland,” Derek Provan, chief executive of AGS Airports, said. <https://dronelife.com/2021/01/21/uk-airport-consortium-develops-drone-delivery-network-in-scotland/>

ANRA Providing Airspace Management for European Union Urban Air Mobility Project January 21, 2021 News



ANRA Technologies is pleased to announce its participation in AMU-LED, a [Horizon 2020](#) project of the European Union framed in the [SESAR](#) Joint Undertaking, which aims to demonstrate **the safe integration of cargo and passenger drone operations in urban airspace**.

Expected to span over a two-year period, Air Mobility Urban – Large Experimental Demonstrations, or AMU-LED, will be the largest undertaking of its kind with a consortium of **seventeen companies, organizations, and municipalities across the United States and Europe**. Starting with testing and simulations, the project will culminate in 2022 with more than 100 hours of air vehicle flight tests over cities in the Netherlands, Spain, and the UK.

ANRA Technologies will play a key role in the project by providing its proven SmartSkies™ family of software platforms for airspace management and simulation. ANRA’s platforms and expertise will to enable various exercises supporting simulated and live eVTOL operations in various scenarios, use cases and applications, at scale, in Europe and the UK. These will include cargo and passenger transport, delivery of goods and medical equipment, infrastructure inspection, law enforcement operations, and emergency services support.

For additional information, please read the AMU-LED press release:

https://uasweekly.com/2021/01/21/anra-providing-airspace-management-for-large-scale-european-union-urban-air-mobility-project/?utm_source=rss&utm_medium=rss&utm_campaign=anra-providing-airspace-management-for-large-scale-european-union-urban-air-mobility-project&utm_term=2021-01-22



UAS and SmallSat Weekly News

EHang joins EU's AMU-LED project to demo Urban Air Mobility Scott Simmie Jan. 22nd 2021



EHang, a global leader in the coming market for autonomous, passenger-carrying drones, has announced membership in the Air Mobility Urban – Large Experimental Demonstration (AMU-LED) projects. **Initiated by the European Union**, there are 17 major players taking part in the consortium, including EHang, Airbus, and

Boeing. This explanation comes from the EHang news release:

The AMU-LED is an H2020 project of the European Union framed in the Single European Sky ATM Research Joint Undertaking with the goal of showcasing demonstrations of mobility services with air vehicles and the safe integration of different types of drone operations in urban environments. Planned for two years with more than 100 flight hours, the AMU-LED will kick off in **January 2021** showcasing various uses for passenger transport in air taxis, cargo transport, delivery of goods and medical equipment, inspection of infrastructures, police surveillance and emergency services support. Through the AMU-LED program, EHang will increase its interaction with European regulatory bodies including the European Aviation Safety Agency and EUROCONTROL. This cooperative effort should pave the way for the formulation of relevant UAM policies and standards and contribute to the implementation of UAM in Europe. <https://dronedj.com/2021/01/22/ehang-to-test-its-passenger-drone-in-europe-in-amu-led-project/>

FAA's BEYOND drone initiative welcomes new partners Josh Spires Jan. 22nd 2021

The North Dakota Department of Transportation and Northern Plains UAS Test Site has partnered with industry leaders, including Skydio, Volansi, SkySkopes, iSight Drone Services, Airspace Link, Equinor, Workhorse, and Xcel Energy, to execute the [FAA's BEYOND program](#) goals.



The program has hit a major achievement today after the North Dakota Department of Transportation and Northern Plains UAS Test Site brought on many industry players to ensure the program's goals are met.



UAS and SmallSat Weekly News

The FAA wants to tackle the remaining challenges with its BEYOND initiative, with the main one being **beyond visual line of sight operations** that can be repeated, scaled, and be economically viable, focusing on infrastructure inspection, public operations, and small package delivery.

The program will also look at leveraging industry operations to improve analysis and quantify drone operations' societal and economic benefits. Another big issue is the community's perception of drones and will include data collection to see what can be done.

Rather than operating under waivers, BEYOND focuses on currently established rules and laws to collect accurate data to develop more accurate standards. The BEYOND program will collect and address community feedback, understand the societal and community benefits of drones, and streamline the approval process for drone integration. <https://dronedj.com/2021/01/22/faas-beyond-drone-initiative-welcomes-new-partners/#more-47513>

24Jan21

UK drone delivery service to assist overstretched NHS in COVID fight HEADLINE

NEWS JOE PESKETT JANUARY 24, 2021



Skyports has chosen to leverage Swoop Aero's aviation platform and 3D-printed electric drones to deliver a wide range of services including delivering essential medical supplies for the National Health Service to remote areas.

With hospitals and NHS staff at capacity during the COVID-19 pandemic, deliveries of supplies **between hospitals** have become essential to the provision of basic healthcare. With the support of the Swoop Aero platform, Skyports' on-demand service will allow the transport of high-value, perishable cargo such as vaccines, medicines and pathology samples.

Skyports specialises in operating deliveries within the medical, e-commerce and logistics sectors. The company is already conducting medical drone deliveries to assist the NHS in Scotland in the battle against COVID-19 and will be expanding its service in the coming months. Skyports is also helping Royal Mail to deliver to the most remote parts of the UK. The **Swoop Aero platform** is the latest to join Skyports' growing fleet of world-leading unmanned aircraft.

Swoop Aero is a drone-powered logistics company with established operations in five countries throughout Africa and the Pacific. <https://www.commercialdroneprofessional.com/uk-drone-delivery-service-to-assist-overstretched-nhs-in-covid-fight/>



UAS and SmallSat Weekly News

Robot boats and drones will test Outer Banks oyster beds for water

pollution JEFF HAMPTON THE VIRGINIAN-PILOT JAN 23, 2021



Researchers are testing drones and robot boats that work together to measure pollution around Outer Banks oyster beds.

The drones and boats, developed by researchers from North Carolina State University, work much like an aircraft carrier operation; the drones will be able to take off and land on the robot boats, where they can also recharge.

Faster water testing could **save** oyster farmers from losing about **a quarter of their annual earnings**, said Sierra Young, an assistant professor at N.C. State's Department of Biological and Agricultural Engineering. "This project is great because it combines people with different expertise to solve a specific problem," Young said. "And this is a pretty big problem."

Tests have shown the catamaran-style boat, which is more than a meter long, can motor around the surface measuring water temperature, oxygen and salinity and send the data to the drone soaring overhead. https://www.pilotonline.com/news/vp-nw-oyster-drones-20210123-7h7cxzukizggnfopbm4tbfq2xq-story.html?utm_source=newsletter&utm_medium=email&utm_campaign=Today%27s%20Top%20Stories&utm_content=6261611437349#nws=true

25Jan21

Britain pushes ahead with plans for first fighter drone Reuters Staff



LONDON (Reuters) - Britain pushed ahead with plans for its first fighter drone on Monday, signing a \$41 million design and manufacture contract for the unmanned aircraft to have a trial flight in the next three years. The government said in a statement that the drones will be built to act as a "loyal wingman" to its Typhoons and F-35s, flying alongside the military jets to shoot down enemy aircraft.

Last November, the country announced its biggest military spending increase since the Cold War, pledging to end the "era of retreat". The extra 1.5 billion pounds of investment for military research and development will help fund the new drones.



UAS and SmallSat Weekly News

The new contract was signed with the Belfast unit of **Spirit AeroSystems**, the U.S. group which last year acquired the former Bombardier business in Northern Ireland and includes a full-scale vehicle flight test program by the end of 2023. If the program, named Team MOSQUITO and which also includes the UK unit of **Northrop Grumman**, is successful, the government said that the drones could be deployed alongside British fighter jets by the end of the decade.

<https://www.reuters.com/article/uk-britain-defence-drones/britain-pushes-ahead-with-plans-for-first-fighter-drone-idUSKBN29U0WY>

The Ban on Chinese and “Foreign Entity” UAS Expanded Miriam McNab: January 21, 2021



Up until now, most of the U.S. government’s extra special attention in the politico economic sphere in relation to foreign drones was laser-focused on China. That changed with the [January 18, 2021 Executive Order on Protecting The United States From Certain Unmanned Aircraft Systems \(UAS\)](#), which **expanded** the [U.S.-China drone tech](#) war to

fronts in North Korea, Iran and Russia.

Its purpose is to, “prevent the use of taxpayer dollars to procure UAS that present unacceptable risks and are manufactured by, or contain software or critical electronic components from, foreign adversaries, and to encourage the use of domestically produced UAS.”

However, the latest executive order on drones does not constitute an actual cease-and-desist. It falls more in the “go review” than “can’t do” category. It requires the feds, within the next 60 days, to **review** their “authority to cease” procuring, funding or contracting the “covered UAS” of such foreign adversaries. <https://dronelife.com/2021/01/21/the-latest-executive-order-on-drones-the-ban-on-chinese-and-covered-country-uas-expanded/>

SpaceX smashes record with launch of 143 small satellites January 24, 2021 Stephen Clark



SpaceX launched a Falcon 9 rocket Sunday from Cape Canaveral with 143 small satellites, **a record number of spacecraft on a single mission**, giving a boost to startup space companies and stressing the U.S. military’s tracking network charged with sorting out the locations of all objects in orbit.

The Falcon 9’s reusable first stage booster — **flying for the fifth time** — **landed on SpaceX’s “Of Course I Still Love You” drone ship** in the Atlantic Ocean



UAS and SmallSat Weekly News

southeast of Miami nearly 10 minutes after liftoff. SpaceX said it also retrieved the rocket's payload fairing halves after they parachuted back to Earth in the Atlantic.

The launch Sunday carried payloads for Planet, Swarm Technologies, Kepler Communications, Spire, Capella Space, ICEYE, NASA, and a host of other customers from **11 countries**. The payloads ranged in size from CubeSats to microsattellites weighing several hundred pounds.

SpaceX aimed to place the satellites into an orbit roughly 326 miles in altitude, with an **inclination of 97.5 degrees to the equator**. The mission Sunday **broke the record** number of satellites on a single launch, exceeding the 104 spacecraft launched on an Indian Polar Satellite Launch Vehicle in 2017. <https://spaceflightnow.com/2021/01/24/spacex-launches-record-setting-rideshare-mission-with-143-small-satellites/>

Methane measurements at Fluxys Belgium with a UAV 2021-01-25



Riga, Antwerp, Zurich – In Q4 2020, SkyeBase, an inspection service provider, addressed the request from Fluxys Belgium, a gas infrastructure group headquartered in Belgium, to control several zones of their high pressure gas pipeline and decompression installations on methane leakages. The method confirmed to be safe, accurate, labor and cost effective compared with traditional helicopters or ground

sniffers and fixed sensors.

To perform the inspections, SkyeBase's DJI M600 drone was equipped with Pergam-Suisse's Falcon methane/natural gas detection laser-based sensor. Hard-to-reach locations were inspected and mapped including wet, wooded and densely built locations. The measured values were linked to GPS coordinates. The method allows safe, unmanned access to the asset. It guarantees higher uptime, more accurate and coherent inspection results and reduces inspection costs. https://www.uavexpertnews.com/2021/01/use-case-of-methane-measurements-at-fluxys-belgium-with-an-uav/?utm_source=Master&utm_campaign=9170bf6eae-EMAIL_CAMPAIGN_2017_12_20_COPY_01&utm_medium=email&utm_term=0_35ad7bc94d-9170bf6eae-89168288



UAS and SmallSat Weekly News

COVID Humanitarian UAS Operation Concludes Delivery Test in Syracuse 2021-01-25



(SYRACUSE, NY) – The COVID-19 Humanitarian Unmanned Aircraft Systems Response Partnership (CHURP) announced the conclusion of its latest operational phase: multi-day flight operations and evaluations of two separate use cases **to prepare for wider-scale deployment**. The Partnership was formed nine months ago by

Emergent 121 Consulting and Akin Gump, LLP. The operation included collaboration among UAS, health, and public safety leaders. The project began on January 14 and closed with a local media demonstration on January 16 at The State University of New York’s Upstate University Hospital and the Central New York Biotech Accelerator.

Through this operation, CHURP worked to give public health officials the technology for public safety awareness, public address capability and contactless delivery that enhance response speed and efficiency while reducing personnel requirements and potential exposures.

“It has been a privilege to leverage diverse talents and resources while building consensus between agencies,” said Nancy Chrisman, CEO, Emergent 121 Consulting, sponsor and facilitator of the project.

DroneUp, the drone provider for the CHURP team, conducted training, testing and evaluation. “The scale of partnership and success we’ve had in these efforts to aid our national COVID response is encouraging,” said Tom Walker, CEO of DroneUp. “With expert representation from every stakeholder group, we are demonstrating the first of many ways UAS will improve the way we react to public safety and health concerns.”

DroneUp collaborated with NUAIR to provide drone pilot training at the New York UAS Test Site at Griffiss Airport. NUAIR’s extensive knowledge of local airspace and restrictions, coupled with years of testing at the test site and advanced drone operations within New York’s 50-mile UAS Traffic Management Corridor, helped make these real-life cases a success.

https://www.uavexpertnews.com/2021/01/covid-humanitarian-uas-operation-churp-concludes-delivery-test-in-syracuse/?utm_source=Master&utm_campaign=9170bf6eae-EMAIL_CAMPAIGN_2017_12_20_COPY_01&utm_medium=email&utm_term=0_35ad7bc94d-9170bf6eae-89168288



UAS and SmallSat Weekly News

Quantum communication network goes long with help of drones 2021-01-21 UAV

Expert News



In the future, communication networks could be based on the bizarre world of quantum mechanics. Researchers in **China** have demonstrated a [quantum network](#) where entangled photons are beamed between drones and ground stations, successfully maintaining their quantum link over a distance of 1 km (0.6 miles).

Quantum entanglement involves pairs of particles becoming so intertwined that it becomes impossible to describe them individually. By measuring a property of one of them, such as its polarization, you'll be able to tell the same property of its partner. Weirder still though, it appears that you're actually *changing* the state of the partner instantly, no matter how much distance separates them.

in the new study, researchers from **Nanjing University** in China experimented with a setup using drones. The researchers wanted to connect two ground stations, one nicknamed Alice and the other Bob. Each station collects photons using a telescope with a 26-mm-wide aperture and a single-photon detector. But it wasn't a direct link between the stations – there were two drones hovering in the sky above them.

The first drone generates entangled pairs of infrared photons, then sends one of them to the Alice station and the other to the second drone. This drone uses an optical fiber to collimate the photons it receives, effectively "focusing" them so they can then be passed on to the Bob station on the ground.

The drones were about 200 m (656 ft) apart, and each was 400 m (1,312 ft) from the station it was passing the photons to, meaning the message was effectively traveling 1 km total. Alice recorded about 25 percent of the photons sent its way, while Bob only caught about four percent. That may sound low, but it's a decent step up from previous fiber optic experiments where only around one percent of the photons completed the journey. The team compared the polarizations of the photons received by the Alice and Bob stations and found they did remain entangled over the entire trip.

The next steps, the researchers say, are to add more drones to increase the size of the network, potentially providing quantum links across a city.

<https://newatlas.com/telecommunications/quantum-communication-network-drones/> Also see "The



UAS and SmallSat Weekly News

Fabric of the Cosmos" by Brian Greene. He discusses Quantum Entanglement and Quantum Teleportation on page 442. (Maybe you can find it in your public library.)

Wingcopter raises \$22 million in funding round to expand into North America

Josh Spires Jan. 25, 2021



The company will also use the funds to strengthen its leadership in the market, deliver COVID-19 vaccines and launch the next delivery drone.

The company's latest [funding round](#) was led by Xplorer Capital and Futury Regio Growth Fund, with Futury Ventures and Hessen Kapital III participating.

The company's current drone, the Wingcopter 178 Heavy Lift, will soon be joined by its bigger brother, with some of the funding going into developing a new drone with a more extensive range and payload capacity. The next-generation drone is almost ready to go, with pre-orders being accepted already.

It will also increase its manufacturing capabilities with a new 77,500-square-foot facility opened at its new German-based headquarters with a serial production line.

Wingcopter will open a new US facility to allow flight testing, certification, drone manufacturing and software development. This should enable Wingcopter to offer "Made in USA" drones that satisfy the needs of government agencies. <https://dronedj.com/2021/01/25/wingcopter-raises-22-million-in-funding-round-to-expand-into-north-america/#more-47668>

26Jan21

CAELUS Project Will Help the NHS Deliver Better Healthcare and Advance Drone Delivery

Miriam McNabb January 25, 2021



The [CAELUS Project](#) (Care & Equity – Healthcare Logistics UAS Scotland) was designed to help improve healthcare access, but the project could also advance drone delivery and airspace management.

The project, which began on December 1, 2020 and is scheduled to run until Spring 2022, is consortium led by AGS Airports that will develop and trial a **national distribution network** using



UAS and SmallSat Weekly News

drones to transport medical supplies including medicines, blood, and organs throughout Scotland.

The project will involve live drone flight trials, which means that the consortium will need to develop the ground infrastructure for charging, flight control systems, and to design pathways that ensure the drones can safely share airspace with civil aviation. The consortium will produce a digital blueprint of the drone delivery network with the potential to connect hospitals, pathology laboratories, distribution centers and doctors' offices across Scotland. <https://dronelife.com/2021/01/25/caelus-project-will-help-the-nhs-deliver-better-healthcare-and-advance-drone-delivery-and-airspace-management/>

Forest Fire Monitoring with Drones and Wind Sensors 25 Jan 2021 Mike Ball



[FT Technologies'](#) FT205 wind sensor has been used in conjunction with an unmanned aerial vehicle to predict the progress of forest fires in Andalusia, Spain, where such fires are a regular occurrence during the summer months. The lack of data during night-time hours can have disastrous consequences.

To solve this problem, environmental agency AMAYA and INFOCA (the authority dedicated to the prevention and extinction of forest fires in Andalusia) jointly funded a project to test a new drone specifically designed to fly at night to monitor wind speed and direction directly at the fire front. The drone was equipped with FT Technologies' [FT205 wind sensor](#). It weighs just 100 grams, features an electronic compass and can measure wind speeds of up to 75 m/s.

The drone equipped with the FT205 wind sensor was tested in four real forest fire situations. Measurements were taken at different altitudes to confirm the wind direction. The data collected was used to complement the existing system of ground weather stations.

Javier Prada Delgado, Integration Engineer at Dronetools SL, commented: "In the final analysis, the sensor worked accurately in real fire situations. The drone, equipped with the FT205 sensor, was an indispensable tool for predicting the advance of the fire at night."

https://www.unmannedsystemstechnology.com/2021/01/forest-fire-monitoring-with-drones-and-wind-sensors/?utm_source=UST+eBrief&utm_campaign=9fb00a8f27-eBrief_2021_25Jan&utm_medium=email&utm_term=0_6fc3c01e8d-9fb00a8f27-119747501



UAS and SmallSat Weekly News

27Jan21

SpaceX adds laser crosslinks to polar Starlink satellites Jeff Foust January 26, 2021



WASHINGTON — The first Starlink satellites launched to polar orbit are equipped with laser crosslinks, a technology the company plans to add to other satellites next year. SpaceX included 10 Starlink satellites on its Transporter-1 dedicated rideshare launch Jan. 24.

In tweets after the launch, Elon Musk said those satellites were equipped with laser intersatellite links. “These also have laser links between the satellites, so no ground stations are needed over the poles.” Such links allow operators to minimize the number of ground stations, since a ground station no longer needs to be in the same satellite footprint as user terminals, and extend coverage to remote areas where ground stations are not available. They can also **decrease latency**, since the number of hops between satellites and ground stations are reduced.

SpaceX has tested intersatellite links on other Starlink satellites, although they are not in widespread use. During a September 2020 webcast of a Starlink launch, [the company said it tested “space lasers” between two satellites](#), relaying hundreds of gigabytes of data. “Once these space lasers are fully deployed, Starlink will be one of the fastest options available to transfer data around the world,” the company said at the time. <https://spacenews.com/spacex-adds-laser-crosslinks-to-polar-starlink-satellites/>

Advanced Air Mobility: Air Taxis, Cargo Shuttles Predicted to Create More than 280,000 Jobs Miriam McNabb January 26, 2021



Ehang passenger drone

A recent report by the [Aerospace Industries Association](#) and global consulting firm [Deloitte](#) predicts that the US advanced air mobility market could reach **\$115B by 2035** and create 280,000 jobs – if it’s handled right.

“[Advanced Air Mobility: Can the U.S. Afford to Lose the Race?](#)” says that the new industry is “predicted to become mainstream in the 2030’s” and that “U.S. aerospace and defense companies are poised to lead the nascent global industry.”



UAS and SmallSat Weekly News

Passenger drones, air taxis, cargo drones and more make up the Advanced Air Mobility (AAM) market. In the last year, AAM companies have received major investment and have seen tremendous growth in trial projects that range from aerial sightseeing to high-rise apartment building firefighting. The benefits of AAM as part of efforts to adopt more environmentally friendly transportation and relieve road congestion are very clear. To date, however, the vast majority of [trial projects](#) have taken place **outside of the U.S.**

It's a high stakes race, but "the global race for AAM leadership is intensifying, and the U.S. faces strong competition from China, Germany and South Korea," says Deloitte. To compete, the U.S. will need to accommodate AAM trials and begin work to develop appropriate infrastructure and regulations – **soon**. <https://dronelife.com/2021/01/26/advanced-air-mobility-air-taxis-cargo-shuttles-and-more-predicted-to-create-more-than-280000-jobs/>

SKYDIO JOINS FAA BEYOND PROGRAM —COULD PLAY A KEY ROLE IN FUTURE DRONE REGULATION January 27, 2021 Sally French The Drone Girl News



The Northern Plains UAS Test Site named eight companies and organizations that it will partner with as part of its participation in the FAA BEYOND program — and one of them is also one of the hottest names in drones right now: Skydio.

The North Dakota Department of Transportation and the Northern Plains UAS Test Site this month announced the names of the eight companies that it would partner with as part of the Federal Aviation Administration's BEYOND program: **Airspace Link, Equinor, iSight Drone Services, Skydio, SkySkopes, Volansi, Workhorse** and **Xcel Energy**.

The [BEYOND program](#) was launched by the FAA in October 2020 as a grouping of eight state, local and tribal governments (one of them being the North Dakota Department of Transportation). Those eight organizations are then tasked with partnering with private companies to collect data to develop performance-based standards, collect and address community feedback and understand the societal and community benefits, and study how it can streamline the approval processes for UAS integration. That information is then transmitted to the FAA, which will be used to inform future drone regulation.

<https://www.thedronegirl.com/2021/01/27/skydio-faa-beyond-north-dakota/>



UAS and SmallSat Weekly News

UK consortium to develop remote operating center for complex drone missions

January 18, 2021 Jenny Beechener UAS traffic management news



A consortium of **16 organizations** led by specialist drone developer, sees.ai, including NATS, BAE Systems, Terra Drone and Sky-Futures, has won a share of **GBP30 million** to develop and test a **remotely operated drone system** for industrial and urban environments. The funding comes from the Future Flight Challenge, Phase 2 competition, part of the Industrial Strategy Challenge Fund, delivered by UK Research and Innovation.

The futuristic system will enable **remote inspection and monitoring** of industrial sites e.g. nuclear, construction and oil & gas, urban sites in the public domain e.g. road & rail and telecoms infrastructure and emergency services support.

The system, which uses similar technology to autonomous cars, enables automated drones to be flown under human supervision by pilots based in a central control room hundreds of miles away. Pilots can execute complex missions remotely – even reactive missions and close-quarter missions encountering GPS-denial, magnetic interference and degradation & loss of comms. Technical contributors to the consortium are: NATS, Vodafone, BAE Systems, The Met Office, Flock Cover, UAM Consult Ltd and University of Bristol Smart Internet Lab.

The project involves a series of tests with end-client organizations: Skanska; Skanska Costain STRABAG working in partnership with HS, Sellafield, Lancashire Fire and Rescue Service, Vodafone, Network Rail and Atkins. During these tests, the system will be operated by two drone service providers, Terra Drone and Sky-Futures or by the in-house drone teams at Sellafield, Network Rail and Lancashire Fire and Rescue Service.

https://www.unmannedairspace.info/latest-news-and-information/winning-consortium-to-develop-advanced-drone-system-for-industrial-and-urban-environments-in-uk-future-flight-challenge/?utm_campaign=Energy%20Drone%20%26%20Robotics%20Coalition%20Content&utm_medium=email&_hsmi=108349277&_hsenc=p2ANqtz--tFMElhJpGU3PBv12Fiw1L42FZrVJaYQc3zB06osYZVBsIHPQOKOighsqYHa6fvIYg6F5z1F8tslflhkAZVUvOhO3SzA&utm_content=108349277&utm_source=hs_email



UAS and SmallSat Weekly News

Walmart to begin drone delivery pilot this summer 2021-01-27 UAV Expert News



Walmart customers along the Arkansas and Missouri state line will soon be able to receive their e-commerce orders via drone delivery. The retailer and drone provider **Zipline International** have announced a pilot program operating out of Walmart's Pea Ridge, Arkansas, store will begin this summer.

"This is going to be the beta test site," Pea Ridge Mayor Jackie Crabtree told the Joplin Globe in an interview this week. "It's the **first one in the country.**"

A Walmart spokesperson didn't offer any new details on the project or a timeline but pointed to a blog post, published on Sept. 14, 2020, that outlined the retailer's work with Zipline. The mayor's comments are the first known acknowledgement of when the pilot will begin.

Crabtree told the Globe deliveries would be mostly medical supplies, and at its peak, the service could be making 15 deliveries per day.

In the September blog post, Tom Ward, senior vice president of customer product for Walmart, wrote the Zipline drone would service a 50-mile radius and could make deliveries in under an hour. https://www.uavexpertnews.com/2021/01/walmart-to-begin-drone-delivery-pilot-this-summer/?utm_source=Master&utm_campaign=1009a41e22-EMAIL_CAMPAIGN_2017_12_20_COPY_01&utm_medium=email&utm_term=0_35ad7bc94d-1009a41e22-89168672

This Could Be the Future of Hypersonic Flight Mark Strauss AIR & SPACE MAGAZINE

FEBRUARY 2021



Stratolaunch offered a glimpse of the future when, in October, it posted a photo of the prototype upper composite skin of its Talon-A hypersonic research vehicle on Twitter. When completed, it will test hypersonic payloads at speeds up to Mach 6. While Talon-A can take off horizontally, it will primarily be launched by Stratolaunch's enormous jet carrier aircraft. Originally designed to launch satellites, the company pivoted to providing a testbed for hypersonic vehicles following the death of founder Paul Allen in 2018 and its acquisition by new investors.



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Company spokesperson Art Pettigree says the carrier offers unique advantages: “We are able to provide a wide hypersonic flight envelope for our customers with a range of Mach numbers and dynamic pressures because we are not constrained to a rocket first stage that has a limited flight path due to various location, loading, and environmental

constraints.” Stratolaunch expects Talon-A’s first test flight will be in 2022.

<https://www.airspacemag.com/flight-today/hypersonic-preview-180976720/?spMailingID=44337120&spUserID=NzY1MjM2OTMxNzYs1&spJobID=1922286450&spReportId=MTkyMjI4NjQ1MAS2>

Check out this “rhomboidal” drone wing design Scott Simmie Jan. 27th 2021



A company called FLY-R UAS has been working on building a UAS that takes advantage of something called a Rhomboidal Wing. Here’s how they describe it:

“A rhomboidal wing is part of the closed-wing family. It is characterized by the shape of diamond on the 3 axis and the absence of a vertical control surface. The advantages of this wing over a conventional wing (cantilever) of similar performances are:

- “wingspan reduced by about half;
- “reduced aerodynamic drag;
- “structural mass decreased by one-third;
- “wide range of speed;
- “high and relatively constant lift/drag ratio;
- “high maneuverability.”

This company hadn’t hit our radar yet, but it’s pretty interesting. Formed in 2013, three experienced UAV engineers are at its core. The firm is located on the French island of **Réunion** – a volcanic island off the southeastern coast of Africa – **not too far east of Madagascar**. It’s a pretty remote location. Here’s a look at the R2-150:



This wing really intrigues us. We’ll keep an eye on FLY-R and hope to see some videos on the horizon of one of these aircraft in flight. <https://dronedj.com/2021/01/27/rhomboidal-drone-wing-offers-advantages/>



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28Jan21

US Made Tethered Drone: Zenith AeroTech Integrates Everything You Need on the Quad 8 Miriam McNabb January 28, 2021



[Zenith AeroTech](#) has integrated an advanced flight radar, gimbaled EO/IR camera, and mobile ad hoc networking radio on the company's US made tethered drone, the Quad 8.

It's a complex integration project that takes the term "flexible payload" to the next level – and expands the possible applications for the Quad 8. "The engineering work, which was done at the behest of an unnamed Federal customer, demonstrates how the long-endurance, tethered sUAS can support force protection and early warning missions," says a Zenith press release.

The tethered Quad 8 already offers significant benefits: it can fly at 400 feet AGL for hours or even days at a time, connected to an easily transportable power source. **Headquartered in Afton, Virginia**, Zenith AeroTech designs, fabricates, assembles and tests their tethered drone systems at an 84,000 sf facility located on a secure 10-acre site near the Blue Ridge mountains. With markets that include [emergency services](#), law enforcement, industry, and defense, Zenith AeroTech is one of only a few US made tethered drone providers.

<https://dronelife.com/2021/01/28/us-made-tethered-drone-zenith-aerotech-integrates-everything-you-need-on-the-quad-8/>

NOAA Awards Black Swift Technologies Contract for GPS-Denied Navigation for Drones Juan Plaza JANUARY 26, 2021



Most navigation is done using satellites, either pure GPS or the more complex and satellite-rich Global Navigation Satellite System. One obvious emergency is the loss of signal or the reduction in adequate Receiver Autonomous Integrity Monitoring which makes GPS navigation non-reliable and hence generates an urgent situation.

Recently, a Boulder, Colorado-based company, [Black Swift Technologies LLC](#) has been awarded a contract by the National Oceanic and Atmospheric Administration to address just that. This contract is to develop commercially viable technology to enable GPS-denied navigation of UAVs during flights beyond visual line of sight. BST aims to provide this service through a robust,



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secondary navigation option using their diverse-source global positioning system. This combination of technologies will provide accurate position updates through augmented sensor suites and advanced machine learning capabilities. https://www.commercialuavnews.com/public-safety/noaa-awards-black-swift-technologies-contract-to-develop-gps-denied-navigation-for-drones?utm_source=marketo&utm_medium=email&utm_campaign=newsletter&utm_content=newsletter&mkt_tok=eyJpIjoiWkdFeU5HTmhNR1F6WVdFMClInQiOiJzZ2s2UDg1elhwamdvQmI4UnM3SU1vZjlrVkRqSmN0SEFXQ1N4aVZsTjJjQjZQQUlkYzBRNjJUTWRQdGg3eUVzbiZlVG4wRTdMWHYxYXZ5MEdpUWRwRzc2RnVzN21mSOZ0bDdTaTdlUXFMUU9ac3FZc3ZmM3J0RFwvTFImSGFkZzUifQ%3D%3D

Air taxi service Joby Aero Inc. may go public: Reuters [Scott Simmie](#) Jan. 28th 2021



A California company that has built a passenger-carrying VTOL will soon go public, according to a [recent Reuters report](#). Santa Cruz-based [Joby Aviation](#) is building an air taxi that will likely one day be sharing the skies over urban centers with drones.

Joby Aero Inc. believes it has the solution: An electric, fixed-wing VTOL that can carry four passengers and fly at speeds of up to 200 miles per hour. A lot of others believe in the company's vision as well; it has raised more than **\$800 million** from investors since the company was founded in 2009.

In a recent Reuters exclusive, the news agency reported that Joby was exploring options to take the firm public. Reuters said it was looking at a valuation of around \$5 billion, according to people familiar with the matter." in 2020, the company was valued at \$2.6 billion. Its backers include heavyweights Toyota Motor Corp. and Intel

The design features six articulating motors that are used to achieve vertical take-off, and then transition for forward flight. In 2020, the US Air Force granted Joby Aviation its **first-ever eVTOL airworthiness certification** – a huge milestone. <https://dronedj.com/2021/01/28/air-taxi-service-joby-aero-inc-may-go-public-reuters/#more-47598>

World-first electric Urban Air Port® secures UK government backing January 28,



2021 News Urban Air Port® Air-One® has today been selected as a winner of the UK government's Future Flight Challenge to develop aviation infrastructure and systems that enable the next generation of electric and autonomous air vehicles. Air-One® is a **world-first fully-operational** hub for future electric vertical take-off and landing aircraft – such as cargo drones and air taxis – to be launched in Coventry later this year.



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Urban Air Port® develops fully autonomous innovative zero emission infrastructure for future air mobility. The ambitious Air-One® project will bring industry, government and the public together to demonstrate how to unlock the potential of sustainable urban air mobility to reduce congestion, cut air pollution and decarbonize transport while providing seamless passenger journeys and deliveries.

NASA predicts that urban-air mobility in the US alone could be worth up to **\$500 billion** in the near-term and states that a significant barrier to market growth is the lack of infrastructure,¹ an issue which Urban Air Port® was established to resolve.

The Urban Air Mobility Division of Hyundai Motor Group plans to create its own eVTOL aircraft and support the broader urban air mobility eco-system. It is supporting the development of Air-One® as part of its plan to commercialize its aircraft by 2028.

https://uasweekly.com/2021/01/28/world-first-electric-urban-air-port-secures-uk-government-backing/?utm_source=rss&utm_medium=rss&utm_campaign=world-first-electric-urban-air-port-secures-uk-government-backing&utm_term=2021-01-28

29Jan21

Boeing venture announces world first AI-powered cybersecurity for drones 28

JANUARY 2021 Globaldata Travel and Tourism



SkyGrid, a joint venture between Boeing and SparkCognition, has recently announced a world-first plan to deploy an AI-powered cybersecurity system on drones. The airspace management company has recognized the need for advanced drone security, as drone proliferation gives rise to the need for preparation against hacking attacks. 2020 saw a vast increase in cybercrime by volume and complexity, yet current drone anti-malware is considered inadequate.

SkyGrid's chief software architect, Ali Hussain, claims that making use of SparkCognition's, DeepArmor product, a patented machine-learning cybersecurity technology is "especially important in the UAV industry where we expect to see never-before-seen cyberattacks emerge as more drones take flight."

Instead of using a rules-based, heuristics approach, the DeepArmor software uses sophisticated **AI models** to protect a wide range of endpoints, designed to alleviate any potential zero-day threats. <https://www.aerospace-technology.com/comment/boeing-venture-world-first-ai-powered-cybersecurity-drones/>