



UAS and SmallSat Weekly News

Contents

- 2 GRAND OPENING of New East Coast UAS Facility at SBY
- 2 Skydio poised to supply first tranche of short-range recon drones to US Army
- 3 Azur Drones Help Make Nuclear Fuel Sites Safer
- 3 Joby Picks Garmin G3000 for eVTOL
- 4 DARPA is developing an air-launched drone missile that fires air-to-air missiles
- 4 Israeli Drone Delivery Pilot Demonstrates Civil Drone Flights in GPS Denied Environments
- 5 Thermal drone gives Florida firefighters an inside view
- 6 More drone attacks on Saudi Arabia after airliner is hit
- 6 Visualskies: Meet the UK Studio Living Your Dream Job, Using Drones to Find Lost Cities
- 7 EHang Stock Rises on Successful Tests, New Partnership Rumors
- 7 COULD USING DELIVERY DRONES BOOST SMALL BUSINESS SALES?
- 8 Almaz-Antey tests interceptor drone designed to take out enemy drones
- 8 NASA technical meeting to share UTM lessons learned and next steps 23 February
- 9 European OBeLiSk project addresses integration of high-altitude pseudo-satellites
- 10 Joby Aviation agrees on eVTOL certification class with the FAA
- 11 Pakistan will begin using drones to monitor highways
- 11 Kaman plans flight tests of optionally piloted K-Max in first half of 2021
- 12 World's first flying car is cleared by the FAA and an air-road hybrid is set for 2022
- 13 Air Domain Awareness Program: Federal Agencies Seek Solutions to Defeat Illicit Drones
- 13 Drones set to land 30% of express delivery market
- 14 Iris Automation announces 'Pathfinder' BVLOS program
- 15 UCSD gets nearly \$6 million to help design flying taxis
- 15 Altitude Angel and Inmarsat's groundbreaking pop-up UTM wins 2020 ATM award
- 16 Archer Aviation takes billion-dollar eVTOL order from United Airlines
- 17 TERRA DRONE RAISES \$14 MILLION IN FUNDING ROUND LED BY OIL AND GAS COMPANY
- 17 DroneBoy lights up night sky for amazing commercial spot
- 18 Long Range Cargo Drones: Volansi Joins 3 FAA BEYOND Projects
- 19 Russia will pair drones and combat fighter jets for future warfare
- 19 The Importance of the American Robotics BVLOS Announcement
- 20 Drones for Science: Long Range UAVs New Tool in Understanding Climate Change



UAS and SmallSat Weekly News

13Feb21

GRAND OPENING of New East Coast UAS Facility at SBY John Robinson, Chief Operating Officer 757-824-0600 / john.robinson@srsgrp.com



Salisbury, MD – February 11, 2021: Sentinel Robotic Solutions participated in the Grand Opening of the first Unmanned Aircraft Systems-dedicated hangar on the East Coast, for public use. Salisbury Regional Airport’s (SBY) UAS hangar is located within its Airport Business Park and includes a dedicated launch and recovery site. The Grand Opening took place on Friday, February 5. This **UAS Automation Innovation Center** is available for use February 1, 2021.



Sentinel Robotic Solutions is the Operator of the new 5,000 sq. ft. hangar. All UAS services will be available including pre-coordination to include risk analysis, airworthiness review, spectrum management and airspace coordination including COA applications. Daily onsite operation services include logistics management, project support, air traffic coordination, aviation and ground safety.

The UAS AIC has dedicated office/workspaces, as well as a 55’ tower for GCS antenna placement. Located near the Atlantic ranges for maritime opportunities, the hangar will host UAS testing and development, partnerships with Universities and High Schools for STEM and commercial goods delivery via drones. Director of Aviation Programs, Bryce King, explains further “We will get your UAS program or new idea off the ground with our Aviation Professionals, new facilities, access to various airspace and offshore ranges.”

Skydio poised to supply first tranche of short-range recon drones to US Army Jen Judson 10Feb21



WASHINGTON — The U.S. Army has chosen [California-based drone manufacturer Skydio](#) to supply the service’s first tranche of [short-range reconnaissance unmanned aircraft systems](#). It is a platoon-level, small quadcopter that will provide enhanced situational awareness, a spin-off from the Army’s earlier efforts to develop [a rucksack-portable UAS](#).

The service will evaluate Skydio’s final prototype in early April. The Army’s program office for UAS will then request approval from the Program Executive Office Aviation to start production



UAS and SmallSat Weekly News

of the Skydio system. If approved for production, the Army will begin fielding within 90 days. That event is expected to start this summer.

<https://www.airforcetimes.com/land/2021/02/09/skydio-poised-to-supply-first-tranche-of-short-range-recon-drones/>

Azur Drones Help Make Nuclear Fuel Sites Safer Jason Reagan February 09, 2021



French drone startup [Azur Drones](#) is making recycled nuclear fuel sites safer by deploying its Skeyetech **autonomous** surveillance UAV solution to protect a huge site in The Hague.

Mostly used in the port, energy, defense and oil-and-gas sectors, Azur drones will coordinate with on-ground security teams to maintain **24-7 surveillance** over the highly sensitive site.

“The Hague is a site that has high levels of protection with over 500 people dedicated to security and safety,” Emmanuel Vial, Orano The Hague Site and Material Protection department manager, said.

Using optical and thermal sensors, Skeyetech autonomous drone fly daily surveillance and inspection missions and are directly controlled by security teams without the necessity of remote pilot training. As such, the Skeyetech drone system results in considerable time savings, specifically for the surveillance of more remote or less accessible areas. Compared to perimeter ground patrols, drone missions are faster and can speed up human reaction time in a security breach incident. <https://dronelife.com/2021/02/09/azur-drones-help-make-nuclear-fuel-sites-safer/>

Joby Picks Garmin G3000 for eVTOL Kate O'Connor February 10, 2021



Urban air mobility company Joby Aviation announced on Wednesday that it will be outfitting its all-electric vertical takeoff and landing (eVTOL) aircraft with the Garmin G3000 integrated flight deck. According to Garmin, the touchscreen G3000 system will be adapted for Joby’s eVTOL “to optimize

their air mobility service” along with facilitating future systems upgrades that might be necessary as the UAM segment evolves. Joby is planning for the aircraft to begin commercial operations in 2024.

Joby also confirmed that it is pursuing FAA certification of its eVTOL with the addition of a document defining “special conditions introduced to address requirements specific to Joby’s



UAS and SmallSat Weekly News

unique aircraft.” The details of those conditions are expected to be published in the Federal Register in the next several months. The unnamed eVTOL, which has completed more than **1000 test flights**, is expected to seat a pilot plus four passengers while offering 150-mile range and top speed of 200 MPH. https://www.avweb.com/recent-updates/evtols-urban-mobility/joby-picks-garmin-g3000-for-evtol/?MailingID=552&utm_source=ActiveCampaign&utm_medium=email&utm_content=Bombardier+To+Close+Down+Learjet+Production%2C+Sriwijaya+Air+Prelim+Highlights+Thrust+Imbalance&utm_campaign=Bombardier+To+Close+Down+Learjet+Production%2C+Sriwijaya+Air+Prelim+Highlights+Thrust+Imbalance+-FRIDAY%2C+February+12%2C+2021

DARPA is developing an air-launched drone missile that fires air-to-air missiles JARED KELLER FEBRUARY 09, 2021



The Defense Advanced Research Projects Agency (DARPA) [announced](#) on Monday that it has awarded contracts to General Atomics, Lockheed Martin, and Northrop Grumman as part of its nascent ‘LongShot’ program to “develop a novel UAV that can significantly extend engagement ranges, increase mission effectiveness, and reduce the risk to manned aircraft.”

LongShot drones will act as the first line of attack against enemy aircraft, striking with air-to-air missiles from extra-long ranges to reduce the risk of a counterattack against airborne military assets as they engage in specialized missions downrange.

But rather than simply extending a traditional aircraft’s reach, the LongShot drone would only fire its arsenal of missiles when it’s relatively close to a target, minimizing an enemy’s ability to evade an incoming weapon and vastly increasing the likelihood of a kill.

<https://taskandpurpose.com/military-tech/darpa-longshot-drone-missiles/>

Israeli Drone Delivery Pilot Demonstrates Civil Drone Flights in GPS Denied Environments Miriam McNabb February 11, 2021



The Israeli drone delivery pilot program has now demonstrated civil drone flights in GPS-denied environments, utilizing camera-based visual navigation.

[Sightec](#)’s NavSight system for autonomous flights based on computer vision and artificial intelligence technologies demonstrated their technologies integrated



UAS and SmallSat Weekly News

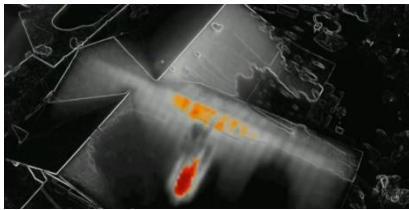
with [Simplex Interactive](#)'s FlightOps.io drone operating system which allows operation of **multiple** drones beyond visual line of sight and in shared airspace.

The system enables camera-based visual situation awareness for autonomous aerial day and night missions, including vision-based navigation and landing (GPS-free), detection and classification of ground and aerial objects as well as 3D mapping & change detection for a full understanding of the ever-changing environment of the drone.

The "FlightOps drone operating system is the **only** technology certified by the civil aviation authority in Israel to fly commercial urban drone deliveries Beyond Visual Line of Sight and has performed hundreds of commercial flights. <https://dronelife.com/2021/02/11/israeli-drone-delivery-pilot-demonstrates-civil-drone-flights-in-gps-denied-environments/>

14Feb21

Thermal drone gives Florida firefighters an inside view Scott Simmie Feb. 11th 2021



A drone equipped with a thermal sensor helped firefighters in Florida determine where the flames were, even though they were not visible. It was the first time the crew had used the drone in this kind of situation.

Fires are difficult enough to contain when you can see the flames. But when firefighters can't see what's burning, that's when things can really get tough. And that's precisely the kind of situation first responders faced in Lauderhill, Florida, Wednesday afternoon.

When the fire crew arrived on the scene, smoke was escaping from the roof. But there were no visible flames, nor any holes in the structure. They launched a drone equipped with a thermal camera. And it did the job.

The fire was first noticed by a nearby worker at around 5 p.m. on February 10. He alerted the owners of the home, who were asleep at the time. They escaped safely, and it wasn't long before Lauderhill Fire Rescue crews arrived.

The drone, said firefighters, provided critical information. <https://dronedj.com/2021/02/11/drone-thermal-sensor-florida-firefighters/>



UAS and SmallSat Weekly News

15Feb21

More drone attacks on Saudi Arabia after airliner is hit INTERNATIONAL JOE PESKETT FEBRUARY 15, 2021



Drone attacks on Saudi Arabia have been sustained in the days following a strike on a flyadeal jet, which was hit while on the ground at Abha International Airport. Last week, a drone operated by Houthi rebels managed to punch a hole in the Airbus A320 aircraft, causing the plane to catch fire, according to Saudi state TV.

Since then, Saudi Press Agency has reported several more attacks by explosive-laden UAVs. The Kingdom has blamed the attacks on Houthi militia. Col. Turki Al Maliki, a spokesman for Joint Arab Coalition Forces, said: "Joint Coalition Forces have intercepted and destroyed this morning a bomb-laden UAV launched systematically and deliberately by the terrorist Houthi militia to target civilians and civilian objects."

On Friday, Saudi Arabia called on support from the UN Security Council to stop threats from Houthi militias and to condemn acts of terrorism. Abdallah Al-Mouallimi, Saudi's UN representative, wrote in a letter to the Security Council: "Such an act of terrorism that targets civilian infrastructure and threatens innocent civilian travelers is a heinous war crime."

<https://www.commercialdroneprofessional.com/more-drone-attacks-on-saudi-arabia-after-airliner-is-hit/>

Visualskies: Meet the UK Studio Living Your Dream Job, Using Drones to Find Lost Cities Miriam McNabb February 12, 2021 *DRONELIFE Staff Writer Jim Magill*



Using drones, 3D scanning technology, LIDAR and other state-of-the-art technology for measuring, interpreting and visualizing data, a UK-based company has done everything from uncovering lost civilizations to creating augmented reality for movies and television.

Founded in 2014, [Visualskies](#) has grown from a company narrowly focused on capturing data from the air to a collaborative network of architects, archaeologists, surveyors and visual effects artists providing aerial- and ground-based filming and photography, high-definition 3D mapping and creating virtual-reality environments.

Among the most daunting challenges was taking part in the production of National Geographic's TV series *Lost Cities With Albert Lin*, in which the company used its technology to



UAS and SmallSat Weekly News

reveal the remains of ancient civilizations in remote regions of the world, including the rugged rain forest in the coastal region of Northern Columbia and the dense jungles of Micronesia.

<https://dronelife.com/2021/02/12/visualskies-meet-the-uk-studio-using-drones-to-find-lost-cities/>

EHang Stock Rises on Successful Tests, New Partnership Rumors Miriam

McNabb February 12, 2021



News and Commentary. One of few publicly traded drone companies, [EHang](#) stock has risen significantly in the last month – and it’s reached the attention of the broader investment community, as even newsletter Motley Fool [weighs in](#) on why the stock has been doing so well.

The rise in EHang might be less of a mystery to the drone industry.



It has gone from [demonstrating a prototype](#) at the 2016 CES show to [demonstrating their working passenger drones](#) throughout Korea in 2020. At DRONELIFE, we’ve written about EHang so often in the last five years that stories claim more than four entire pages in our

archives. From the recreational “Ghost Drone” of 2015 to the advanced autonomous aerial vehicles of 2021, we’ve seen EHang struggle at times: but in the last few years, thrive beyond the imagination of an earlier industry. <https://dronelife.com/2021/02/12/ehang-stock-rises-on-successful-tests-new-partnership-rumors/>

COULD USING DELIVERY DRONES BOOST SMALL BUSINESS SALES? February 15,

2021 Sally French The Drone Girl News



When the coronavirus pandemic hit, it’s no secret that small businesses were severely hurt as people stayed at home.

There’s no need to patronize the coffee shop underneath your office when you’re working from home, and why go out to eat when it’s safer to cook in your own kitchen? Revenues dropped 36% at full-service restaurants by the end of May 2020, according to a [JP Morgan report](#) on small business sales.



But could drone delivery be what it takes to generate sales for struggling small businesses? For Mockingbird Cafe, a bakery in Christiansburg, Virginia, the answer might be yes. The cafe’s owners say drone delivery has

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



UAS and SmallSat Weekly News

accounted for about **25%** of its sales during the COVID-19 pandemic. It is one of the companies partnering with Wing, the drone delivery sibling company of Google. Eligible residents of Christiansburg can place orders and select to have them delivered to their homes. For some, it's a novelty. For others who aren't leaving their homes due to the pandemic, it's a necessity.

A [recent study by Virginia Tech](https://www.thedronegirl.com/2021/02/15/delivery-drones-boost-small-business-sales/) modeled the potential impact of drone delivery on small business sales, and their results largely back up Mockingbird Cafe's anecdotal evidence. <https://www.thedronegirl.com/2021/02/15/delivery-drones-boost-small-business-sales/>

Almaz-Antey tests interceptor drone designed to take out enemy drones February 15, 2021 Jenny Beechener Counter-UAS systems and policies



A report by *UAS Vision* says Russian defense company Almaz-Antey has concluded testing of an enhanced version of a new interceptor drone designed to find and shoot down or ram enemy drones **autonomously**. The information is sourced from a Sputnik interview with a company representative.

The drone, called the Volk-18, or "Wolf-18," is said to be a substantial improvement over a previously unveiled version of the UAV, featuring a new optical locator system which increases target detection range, and an enhanced control system.

Elaborating on the Volk-18's capabilities for autonomous operation, the Almaz-Antey official explained that, "now, the operator only confirms the decision to attack the enemy drone. Search, identification, target selection, maneuvers and destruction of UAVs are carried out independently. Among Russian drones this is the **first system of its kind.**"

The drone measures 60×60 cm, has a takeoff weight of up to 6 kg, and a flight time of about 30 minutes. Its armament includes three small rocket launchers that **shoot nets** at enemy drones, entangling them and bringing them down. If that fails, the drone **rams** the enemy UAV, breaking it up in mid-air. <https://www.unmannedairspace.info/counter-uas-systems-and-policies/almaz-antey-tests-interceptor-drone-designed-to-take-out-enemy-drones/>

NASA technical meeting to share UTM lessons learned and next steps 23

February February 8, 2021 Jenny Beechener UAS traffic management news



A one-day Technical Interchange Meeting is being held on 23 February 2021 to provide an opportunity to share insights into the research conducted,

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



UAS and SmallSat Weekly News

lessons learned and next steps toward the future of Unmanned Traffic Management.

In 2015, NASA began research on technology, performance requirements and procedures to enable civil UAS operations in low altitude airspace. A Research Transition Team was established to coordinate the NASA and FAA efforts for exploring a new paradigm in air traffic management that will integrate the anticipated new volume of small UAS operations into the NAS without overtaxing the current system.

NASA's research concept addressed small UAS Beyond Visual Line of Sight operations below 400 feet in airspace that contains low-density manned aircraft operations. NASA developed a phased approach, building from rural to urban environments and from low- to high-density airspaces. This progression brought in industry partners to assure the concept would enable their business cases and spur innovative solutions. They ranged from low-risk Visual Line of Sight operations to complex operations in high density urban environments.

The testing culminated in demonstrations in downtown Reno, NV, and Corpus Cristi, TX, in 2019. Results have been published, and technology transfers to the FAA of the UTM system concept, designs and software concluded in 2020. The demonstrations showed that a highly automated, federated, service-based architecture **is feasible** for safely managing future small UAS traffic demands. <https://www.unmannedairspace.info/latest-news-and-information/nasa-technical-interchange-meeting-to-share-utm-lessons-learned-and-next-steps-23-february/>

European OBeLiSk project addresses integration of high-altitude pseudo-satellites February 11, 2021 Jenny Beechener UAS traffic management news



One of the first operational concepts for the safe and efficient integration of high-altitude pseudo-satellites (HAPS) into airspace is being developed and validated as part of the OBeLiSk project. It brings together organizations from the private sector (Leichtwerk Research and Unisphere), State-owned entities (the German air navigation service provider and the German Meteorological Service) and the university sector (TU

Braunschweig, Institute of Flight Guidance). Funding for the project is being provided by the German Federal Ministry for Economic Affairs and Energy as part of its aeronautics research program.

A high-altitude pseudo-satellite is an unmanned aerial vehicle that travels in the stratosphere. They are fully automated and travel much closer to the earth than conventional satellites and



UAS and SmallSat Weekly News

can be used for observation and telecommunication. They can provide intelligence day and night and could be used for search and rescue missions, disaster relief, monitoring of environmentally relevant events and agriculture. They can also extend coverage of the 5G cellular network.

Their performance in terms of speed, climb and descent rates, and long flight duration require careful planning. Human-machine interfaces improve working relationship between digital technology and air traffic control personnel. <https://www.unmannedairspace.info/latest-news-and-information/european-obelisk-project-addresses-integration-of-high-altitude-pseudo-satellites-haps/>

Joby Aviation agrees on eVTOL certification class with the FAA 2021-02-12 UAV Expert News



eVTOL market leader Joby Aviation has announced its **first revenue** in a partnership with the US Air Force's Agility Prime program, as well as the path it agreed on with the FAA for certifying its revolutionary tilt-rotor electric air taxi.

The US military doesn't just see electric VTOLs as a warfighting and logistics opportunity. The Agility Prime team makes the argument that American financial success in what's projected to be an enormous eVTOL air taxi market is itself a matter of national security.

Joby was one of the earliest companies on the eVTOL bandwagon and appears at this stage to be **leaps and bounds ahead** of everyone else in the industry. Not only does it have financial and mass production resources thanks to a [huge investment from Toyota](#), it also has a six-rotor transitioning aircraft prototyped at full scale and more than **1,000 test flights completed**. Indeed, Joby's machine is the **first eVTOL ever** to be awarded an **airworthiness approval by the US Air Force**.

Joby's deal with Agility Prime will bring in the first revenue in Joby Aviation's history and give the company access to "key research facilities and equipment, as well as an opportunity to prove out the maturity and reliability of its aircraft years in advance of entering commercial service."

In return, Joby gives the US Government "valuable data and insight into the operation and performance of eVTOL aircraft," with the goal of helping the Agility Prime team identify "opportunities for early adoption" and build its understanding of how the eVTOL market will develop and expand, commercially and technologically.



UAS and SmallSat Weekly News

https://www.uavexpertnews.com/2021/02/joby-aviation-agrees-on-evtol-certification-class-with-the-faa/?utm_source=Master&utm_campaign=d263cc3988-EMAIL_CAMPAIGN_2017_12_20_COPY_01&utm_medium=email&utm_term=0_35ad7bc94d-d263cc3988-89168288

Pakistan will begin using drones to monitor highways Josh Spires Feb. 15th, 2021



The [Pakistan National Highways and Motorways Police](#) will soon begin using drones to monitor highways and motorways to **control traffic flow**. The drones are also meant to help police quickly **respond to crimes** and chase down criminals.

The drones will be positioned at a few key points along the highways and motorways. They are part of the Pakistan National Highways and Motorways Police's five-year plan to modernize its operations to keep up with future requirements. The drones will allow traffic flow to be monitored and remotely controlled around the clock. This makes sense as installing stationary cameras to cover the highways and motorways would cost a lot more than using drones to monitor multiple road sections. The drones are also expected to catch criminals and track their movements along the roads.

As far as we can see, there aren't any rules governing how the police can use the drones once in the air. It will be interesting to see if they begin using it to hand out speeding fines or identify people, which could cause issues when it comes to privacy.

In neighboring India, police have **already begun** to use drones to monitor its roads. A few weeks ago, it was using 11 drones to monitor farmers rallying in Gurugram. The police also used the drones to proactively block off roads, preventing farmers from getting into the town.

<https://dronedj.com/2021/02/15/pakistan-will-begin-using-drones-to-monitor-highways/#more-49880>

16Feb21

Kaman plans flight tests of optionally piloted K-Max in first half of 2021 Garrett

Reim 12 February 2021



Unmanned K-Max at MCAS Yuma, Arizona

The manned version of the K-Max is a single-engine helicopter with two counter-rotating, intermeshing rotors that can lift 6,000lb as a sling-load. It is often used for lifting applications in remote locations,



UAS and SmallSat Weekly News

such as dropping water on wildfires, moving timber or hoisting power line towers.

An earlier unmanned variant of the K-Max, which had an autonomous flight control system made by Sikorsky, was used by the USMC in Afghanistan in 2011 for cargo resupply. "By taking to the skies and operating exclusively at night, K-Max operators negated the need for the equivalent of 900 ground convoy vehicles, thereby eliminating thousands of exposure hours to improvised explosive devices."

Kaman says it also wants the commercial unmanned K-Max to tackle dangerous missions. "When the job is high, hot, dirty or dangerous, the K-Max will be ready to fight fires, deliver life-saving supplies, or perform the mundane operations that call for an unmanned, heavy lift helicopter," says the company. "Wildfires do not rest at night, and neither will the unmanned K-Max." <https://www.flightglobal.com/helicopters/kaman-plans-flight-tests-of-optionally-piloted-k-max-in-first-half-of-2021/142398.article>

World's first flying car is cleared by the FAA and an air-road hybrid is set for

2022 DAN AVERY FOR DAILYMAIL.COM 15 February 2021



The Terrafugia Transition received a Special Light-Sport Aircraft airworthiness certificate from the agency, giving it the green light for takeoff. A flight-only version of the craft is now available to pilots and flight schools, though it will be another year or so before its car components are 'street legal'.

Terrafugia hopes to have production and approvals on the two-seat hybrid complete for 2022, but those interested in taking it for a spin will need both a driver's license and a sport pilot's certificate.

Chinese-owned Terrafugia has been overly optimistic about delivering a 'roadable aircraft.' It first promised the Transition would be for sale in 2015, then 2018 and then 2019.

'Our team remained focused, improved our quality system, completed the critical aspects of the design, built the vehicle, completed 80 days of flight testing, delivered 150 technical documents and successfully passed the FAA audit,' Terrafugia general manager Kevin Colburn said.

<https://www.dailymail.co.uk/sciencetech/article-9263043/Worlds-flying-car-travels-100mph-altitudes-10-000ft-cleared-FAA.html?ito=1490>



UAS and SmallSat Weekly News

Air Domain Awareness Program: Federal Agencies Seek Solutions to Defeat Illicit

Drones Miriam McNabb February 15, 2021 By DRONELIFE Staff Writer Jim Magill



As the technology for unmanned aerial vehicle and systems grows apace, it also increases the opportunity to use the technology for illicit ends, such as drug trafficking and illegal surveillance. To counter this growing threat, the Department of Homeland Security, in cooperation with the Federal Aviation Administration, is set to launch a series of tests of new equipment and systems to detect, track and identify drones and small manned aircraft that have the ability to **penetrate the U.S. northern border with Canada.**

With support from Congress, DHS has joined the FAA, the Department of Defense, the Coast Guard, Customs and Border Protection's Air and Marine Operations and U.S. Border Patrol to select vendors on an initiative to test and implement state-of-the-art aerial surveillance technologies, sensors and capabilities at the northern border.

Over the next two years, the team will host a series of demonstrations and test events in four locations, each representing a geographical region along the northern border— flat lowland plains, a mountainous region, a maritime environment and an urban setting.

Vendors, vying for government contracts will be given an opportunity to submit their detection technologies for testing — such as radar systems, cameras, radio-frequency systems, acoustic devices and other electronic-capture equipment – and to demonstrate how effectively they can provide surveillance capabilities in each of these environments.

<https://dronelife.com/2021/02/15/air-domain-awareness-program-federal-agencies-seek-tech-solutions-to-defeat-illicit-drones/>

Drones set to land 30% of express delivery market HEADLINE NEWS JOE

PESKETT FEBRUARY 16, 2021



UAS solutions could eventually capture around 30 per cent of the express post/same-day delivery market, according to a new report from L.E.K Consulting.

Exact market share will depend on the configuration of distribution networks and the comparable cost of road-based delivery mechanisms, the report said. Greater uptake can be expected where low-cost last-mile connection options can interface easily and cost-effectively with eVTOL deliveries.



UAS and SmallSat Weekly News

The first commercial passenger flight of an electric vertical take-off and landing (eVTOL) aircraft is likely to launch within the next three to five years with several manufacturers competing to be the first to launch.

“Los Angeles, Paris, China, Singapore and Seoul are some of the most likely jurisdictions for the first launch of commercial passenger services, based on our analysis of the industry, but we are seeing interest in AAMs across the board, including in Australia,” said report co-author and partner at L.E.K. Consulting, Natasha Santha.

In Australia, once eVTOL aircraft are certified, and necessary operator and manufacturing certifications are obtained, it will be possible to operate initial commercial flights under the **existing regulatory construct**. This undercuts the current perception that red tape would prevent eVTOLs from flying within urban and regional environments.

“There are prototypes already being tested in many cities around the world,” said co-report author George Woods. “The investment into the technology is well into the multiple billions”.
<https://www.commercialdroneprofessional.com/drones-set-to-land-30-of-express-delivery-market/>

Iris Automation announces ‘Pathfinder’ BVLOS program Scott Simmie Feb. 16, 2021



For many commercial operations, being able to fly Beyond Visual Line of Sight opens the door to new opportunities. Now, Iris Automation has partnered to help offer a solution to operations in Canada seeking to get to this next stage.

BVLOS flight means a wealth of new commercial opportunities. Tasks like pipeline monitoring, surveillance and other forms of long-range data acquisition require Beyond Visual Line of Sight flight to be practical. There must be risk mitigation, careful analysis of the mission path, along with special applications for waivers and Special Flight Operations Certificates.

Obtaining BVLOS clearance in Canada is anything but a slam dunk. You’ll need to satisfy Transport Canada that you really know what you’re doing, and the risks posed by your operation are both minimal and acceptable. This includes a good look at the mission, the airspace, the safety of the drone you plan to be flying, emergency plans – and much more.

In partnership with Canada’s two Remotely Piloted Aircraft System test sites – [Foremost UAS Test Range](#) in Alberta and [UAS Center of Excellence \(CED\)](#) in Alma, Quebec – Iris Automation is offering a comprehensive program. It includes flight training, assistance gaining BVLOS approvals, a BVLOS safety system, engineering and regulatory support and test center access.



UAS and SmallSat Weekly News

The Program is open to any organizations interested in operating BVLOS services in Canada.
<https://dronedj.com/2021/02/16/iris-automation-announces-pathfinder-bvlos-program/#more-50094>

17Feb21

UCSD gets nearly \$6 million to help design flying taxis. GARY ROBBINS FEB. 16, 2021



NASA has given UC San Diego \$5.8 million to help develop electric-powered flying taxis. UCSD will lead a group of **five universities and companies** in creating software tools to design small fleets of vertical takeoff-and-landing aircraft that are quieter, safer, cleaner, more efficient and affordable than helicopters.

Customers would go to conveniently located taxi stands where they could hail a ride with a smartphone app and join other passengers in getting quickly transported significant distances in areas where ground traffic is often congested. Some taxis might be **pilotless**, flying automated, pre-set routes.

The concept — also known as urban air mobility, or UAM — is largely meant for sprawling areas like Los Angeles which has some of the nation’s worst traffic. A “90-minute ground commute to a downtown workplace could be reduced to a 15-minute air taxi flight,” said John Hwang, a UCSD mechanical and aerospace engineering, said in a statement. Hwang is leading the research team, which includes UCSD engineer Shirley Meng, one of the nation’s foremost battery experts, as well as collaborators from San Diego State University, UC Davis, Brigham Young University, Aurora Flight Sciences and M4 Engineering.

<https://www.sandiegouniontribune.com/news/science/story/2021-02-16/ucsd-gets-nearly-6-million-from-nasa-to-help-design-flying-taxis>

Altitude Angel and Inmarsat’s groundbreaking pop-up UTM wins 2020 ATM award Press 12 February 2021



London, UK: **Altitude Angel**, an Unmanned Traffic Management (UTM) technology provider, and **Inmarsat**, a leader in global mobile satellite communications, announced their jointly developed Pop-Up UTM platform has been named a winner at the prestigious Air Traffic Management Magazine Awards 2020.



UAS and SmallSat Weekly News

The platform delivers Beyond Visual Line of Sight flight tracking for Unmanned Aerial Vehicles enabling them to be safely integrated into controlled airspace and ensuring they are visible to – and can be kept distant from – other air traffic.

Phil Binks, Altitude Angel's Head of UTM, said: "We are honored to be receive this award, which comes soon after we delivered a live demonstration of the Pop-Up UTM concept with our partner Inmarsat. It proved that the technology **can be used anywhere on the planet**, with just a moment's notice, allowing organizations such as blue light services and first responders to safely and securely co-ordinate manned and unmanned aircraft in high-pressure or hostile environments. "What made the demonstration even more impressive was the fact **it took place in a fully operational airspace**, side-by-side with regular air traffic movements.

https://www.suasnews.com/2021/02/altitude-angel-and-inmarsats-groundbreaking-pop-up-utm-wins-2020-atm-award/?mc_cid=cefeb3c6df&mc_eid=9cec79331a&_hsmt=111482092&_hsenc=p2ANqtz--dj9DegTNibaOGjmOxCuHqntkq6SOXZIKXDJ4SxeHGMvboDo_8MSVfPeh2zoZJFPcOv3Fnw2XRJrb8xmgweS-fm7Lp-Q&utm_source=DroneNewsDailyEmailMore

Archer Aviation takes billion-dollar eVTOL order from United Airlines Loz Blain

February 10, 2021



United Airlines might be hurting like the rest of the aviation industry in the Covid era, but it's still looking ahead, and wants in on the electric VTOL game. United has now put in a (highly provisional) \$1 billion order for "up to 200" of Archer's Maker eVTOL air taxis, with an option for an additional \$500 million's worth down the track. As part of the deal, United will

"contribute its expertise in airspace management to assist Archer with the development of battery-powered, short-haul aircraft."

The news comes as Archer moves to list on the New York Stock Exchange, so it's part of an investment drive and should be treated as such.



The current design offers a range of 60 miles.

It's a vote of confidence from United, which sees Archer as a way to get into clean air transport in partnership with Mesa Airlines. It's worth remembering that while a billion dollars is quite a lot in most industries, it's only about three and a half Boeing 787s to a company like United. <https://newatlas.com/aircraft/archer-aviation-evtol-united/>



UAS and SmallSat Weekly News

TERRA DRONE RAISES \$14 MILLION IN FUNDING ROUND LED BY OIL AND GAS COMPANY February 17, 2021 Sally French The Drone Girl News



One rapidly growing drone company could move to even faster growth, thanks to a Series A funding round. Japan-based drone service provider Terra Drone Corporation this week announced that it had raised \$14.4 million in a series A round. The funding was led by INPEX, which is Japan's largest oil and gas exploration and production company, and Nanto CVC, the corporate venture fund of Nanto Bank.

With investment from an oil and gas company, it looks likely that Terra Drone could continue to develop tech in the energy sector. That's thanks to products like Terra Inspectioneering's UT drone, which can conduct Ultrasonic Thickness measurements for things like storage tanks, chimneys, boilers, and vessels. That hardware leverages Terra 3D Inspect, which is a cloud-based platform for industrial inspection data. And Terra Drone's [C-Astral](#) makes long endurance fixed wings that can be used for things like pipeline monitoring, forest fire detection and border controls.

Terra Drone, which was established in 2016, headquartered in Tokyo and operating in more than 25 countries, has been climbing the ranks of drone service providers. German-based drone market research company Drone Industry Insights named Terra Drone the second-largest [drone service provider in 2019](#) (behind drone delivery company Zipline) and the [top drone service provider in 2020](#). <https://www.thedronegirl.com/2021/02/17/terra-drone/>

DroneBoy lights up night sky for amazing commercial spot Scott Simmie Feb. 17, 2021



You've probably seen some of the smaller LEDs that you can attach to drones for light painting or other cool effects. But did you know that some professionals can put *really* bright lights in the air? Just wait until you see what DroneBoy did in Canada.

The job was for a spot for running shoes, but with a high concept: **The runner is running at night through the woods, during an unusual eclipse**. The director was clearly after a mysterious, otherworldly feel.



UAS and SmallSat Weekly News

*Our client wanted a super creative, moving-light look that would have cost a fortune to accomplish with conventional lighting fixtures mounted on cranes. Without the use of our drones the dynamic movement, chases and quick setups would not have been possible. It is a **one-of-a-kind product** and this project really showcased what it can do. We are super happy with the results!*

*For most of our operation we were between 50 and 150 feet AGL. For some of the shots we were flying right over the tree canopy and moving the drone horizontally to create the crazy lighting in the trees look. And the result? **Pretty incredible:***

<https://dronedj.com/2021/02/17/amazing-erie-droneboy-lighting-illuminates-commercial-spot/#more-50176>

18Feb21

Long Range Cargo Drones: Volansi Joins 3 FAA BEYOND Projects Miriam

McNabb February 17, 2021



effort.”

[Volansi](#), a provider of long range cargo drones, has partnered with three of the nine participants in the FAA’s BEYOND program. “Volansi is working directly with the North Carolina Department of Transportation, the [North Dakota Department of Transportation](#) and the University of Alaska Fairbanks for this

The announcement demonstrates the place that the CA-based Volansi has taken in drone delivery. Founded in 2015, the company specializes in “middle-mile drone delivery” – unmanned delivery systems designed to carry cargo over long ranges, flights that travel beyond visual line of sight. If small drone delivery is designed for retail, the Volansi solution is designed for commercial or military use. Fueled by a [\\$50 million Series B investment](#) in September of 2020, Volansi is on a rapid growth trajectory.

[Volansi](#) has announced a string of successful partnerships in the last year, with their long-range cargo drones taking a headline position in projects around the world. Last summer, Volansi announced an [agreement with North Carolina’s Department of Transportation](#) to deliver supplies: the company is working with pharmaceutical giant Merck to [deliver temperature controlled](#) medical supplies. Volansi supports North Dakota’s [statewide drone network, Vantis](#), testing flights beyond visual line of sight. Volansi’s military [subsidiary has joined the US Air](#)



UAS and SmallSat Weekly News

[Force Skyborg project.](https://dronelife.com/2021/02/17/long-range-cargo-drones-volansi-joins-3-faa-beyond-projects/) <https://dronelife.com/2021/02/17/long-range-cargo-drones-volansi-joins-3-faa-beyond-projects/>

19Feb21

Russia will pair drones and combat fighter jets for future warfare [Josh Spires](#) Feb. 18, 2021



[Combining the two aircraft](#) will allow the Russian defense force to close gaps in its air defense systems. The [Okhotnik stealth fighter drone](#) features the latest stealth technology, follows stealth design language and has a take-off weight of 20 tons. The drone is powered by a jet engine that allows it to fly at around 1,000 kilometers per hour (621 miles per hour). According to the Russian Defense Ministry, the drone is also covered in an anti-radar coating and is packed with electro-optical, radar, and other reconnaissance hardware.

In the video below, you can see one of the drones shown in 2019 during an international defense exhibition outside Moscow. You can see the stealth drone flying alongside a Su-57 fighter jet. The flight appears to be a short trip around the runway before it can be seen landing again.

The video description tells us that the drone was flown in a **fully automated** mode as a part of testing. The drone could extend the range of the fighter jet's radar range by going out in front of it. The flight test lasted over 30 minutes and turned out to be a successful test for its army. <https://dronedj.com/2021/02/18/russia-will-pair-drones-and-combat-fighter-jets-for-future-warfare/#more-50273>

The Importance of the American Robotics BVLOS Announcement Juan Plaza

FEBRUARY 16, 2021



For the unmanned aerial vehicle (UAV) industry to become mainstream, there are many pieces of a puzzle that must fit into place. We need to find a way to securely integrate into a crowded and extremely safe national airspace, but we also have to figure out how to make it in a way that is profitable and repeatable.

Flights beyond visual line of sight (BVLOS) are the obvious starting point, and many companies are working with the Federal Aviation Administration and the National Aeronautics and Space



UAS and SmallSat Weekly News

Administration to develop and deploy technologies that allow for these flights to be conducted safely and within the strict rules that also apply to general aviation and commercial airliners.

But the real leap forward is the attainment of **full autonomy** for UAVs. That's why, in our opinion, the announcement that American Robotics, a Massachusetts-based company, was [awarded a waiver and exemption allowing its unmanned aircraft to fly BVLOS](#), marks a **very important milestone**. We were able to connect with Reese Mozer, CEO of [American Robotics](#) for an exclusive interview about his company, its technology and the importance of the announcement. See the interview: https://www.commercialuavnews.com/forestry/the-importance-of-the-american-robotics-bvlos-announcement?utm_source=marketo&utm_medium=email&utm_campaign=newsletter&utm_content=newsletter&mkt_tok=eyJpIjoiTXpabE5XTXpaRGcxTnpBNCIsInQiOiJVamxUajVISWFvemttczZIS2RHckpmWkxaXC9RTFIEeHFNZldScHB4dmsxWXJwTE55SXhwcGt6TjhhMjJVTGxb3dWXC84XC92Vyszc1Vua1dmZW RaTVRXT2xWRk15bGtLK3FwUHFMQ2pldWN6N0xLXC9aTmJSVEhGRWR6NTM1NmNYQkwifQ%3D%3D

19Feb21

Drones for Science: Long Range UAVs New Tool in Understanding Climate

Change: Miriam McNabb February 18, 2021



A project designed to help understand current climate issues used the [BOREAL](#) fixed-wing UAV equipped with specialized sensors to gather data from areas around Barbados.

The [EUREC4A](#) project (Elucidating the role of clouds-circulation coupling in climate), co-directed by the Max Planck Institute for Biophysical Chemistry in Hamburg and the Dynamic Meteorology Laboratory (Laboratoire de Météorologie Dynamique: LMD) in Paris, brought more than 100 scientists from Europe and the United States to work on understanding climate issues. “Understanding the effects of climate change on the tropical zone, and more particularly at the level of trade wind clouds, is a major challenge. Indeed, detecting property changes around these phenomena is essential as they illustrate the imbalances in heat exchanges that control the climate,” says a press release. More than 10 international climate laboratories with 5 oceanographic vessels, instrumented floats, land-based tools like balloons and aerosols, meteorological research aircraft, and drones – including the BOREAL long range fixed wing participated to meet the challenge.

Multiple drones were used during the project, with the BOREAL flying long range (over 100 km), in coordination with manned meteorological aircraft, “to collect measurements of radiometry,



UAS and SmallSat Weekly News

aerosols, temperature, humidity and turbulence in the lower layers of the atmosphere.” Layers very close to the surface are poorly known because they are under-instrumented by scientists, even though they are precisely where the energy exchanges between the ocean and the atmosphere take place: but scientists lack data because it is too dangerous for manned aircraft to fly at an altitude of only 10 – 50 meters above the surface.

By using multiple drones for science, the EUREC4A project also demonstrated the safe coordination of multiple aircraft: short range UAVs, long-range fixed wing UAVs, and manned aircraft, using a satellite positioning and communication system shared with all the operators on the ground. <https://dronelife.com/2021/02/18/drones-for-science-long-range-fixed-wing-uavs-new-tool-in-understanding-climate-change/>