UAS and SmallSat Weekly News

Contents

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4Dec21

Walmart taps growing Virginia Beach company to develop drone delivery system TREVOR METCALFE THE VIRGINIAN-PILOT DEC 03, 2021

Two DroneUp employees work on a delivery drone being used by Walmart at its Farmington, Arkansas, store. The retail giant recently invested in the Virginia Beach company to help assemble its drone delivery network.

DroneUp, a Virginia Beach app developer and drone services provider, recently landed a deal with the largest retailer in the world. Walmart is now using DroneUp technology to launch a drone delivery service at three northwest Arkansas locations, with more to come. As part of the deal, DroneUp is looking to hire hundreds of people within the next year.

The Walmart deal is a big milestone for the 5-year-old company, DroneUp founder and CEO Tom Walker said. The agreement will allow DroneUp to create delivery hubs for store locations across the country.

What the partnership means for Walmart customers, in Arkansas at least, is the ability to order delivery online and have a drone zip over with their items in as quickly as a half-hour. After placing an order, Walmart workers pack the items, and a drone pilot flies the package over to the customer's home.

The service is currently only available at the Walmart in Farmington, Arkansas, and will expand to two other Arkansas locations in the next few months.
https://www.pilotonline.com/business/vp-nw-droneup-walmart-1204-20211203-5joxdyl53ffkzcc57tciogyg5i-story.html?utm_source=newsletter&utm_medium=email&utm_campaign=Don%27t%20Miss&utm_content=7161638541423#nws=true

DRONES ADD TO COAST GUARD'S CAPABILITIES Jim McCarthy December 3, 2021

On the grounds of Station Islamorada recently, Coast Guard members looking to become certified drone pilots grabbed handheld controllers during a three-day training with instructors. Launching the station's two drones into the air, two instructors stood by trainees as they

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maneuvered drones over the waters, scouring the mangroves of Snake Creek and surveying the scene from above before bringing them back for landing.

Trainees had to obtain an FAA Part 107 license before receiving training and a remote pilot certification to fly missions with the Coast Guard. Three newly certified pilots are expanding the Unmanned Aircraft Systems (UAS) program in the U.S. and the Keys. Lt. Cmdr. Dominic Bucciarelli, program manager for the Coast Guard's short range UAS, said the small drone introduction onto cutters and stations began in 2018, when authorization by Congress was given for their use by the Coast Guard. The intent of the program is twofold, he said.. "It's also offering us some civil engineering aspects. After a hurricane, we can do assessments a lot quicker instead of grabbing an expensive helicopter or plane."

Seven units in the Coast Guard began using short-range drones during the start of the program three years ago. Today, Bucciarelli said, 35 out of some 400 Coast Guard units in the country have drone deployment capabilities. https://keysweekly.com/42/drones-add-to-coast-guards-capabilities-in-the-keys/

Drone with thermal imaging helps police arrest man accused of stealing iPads, iPhones Bob Jones , Kaylyn Hlavaty *Dec 01, 2021*

MEDINA, Ohio — A drone with thermal imaging technology helped the Medina Police Department arrest one of three people accused of stealing $4,500 worth of tech items, including iPads and iPhones, from the Target store in Medina Monday night.

Target employees told police that on Monday at approximately 9:57 p.m., three males took backpacks, iPhones and iPads from the store before fleeing in a Chevrolet Trailblazer.

Shortly after the theft, police spotted the Trailblazer on Weymouth Road. The vehicle pulled into a driveway, and the three males got out and fled on foot, prompting a short foot chase before police officers lost sight of them.

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About two hours later, the Medina Police Department brought out one of their four drones to help locate the males on foot. Two of their drones, valued at $7,000, have thermal imaging. The drone's thermal imaging helped locate one of the men who appeared to be hiding under a bridge.

The 28-year-old man was arrested without incident. He's charged with felony theft and obstructing official business, a misdemeanor. The other two males wanted in the theft are still at large. https://www.news5cleveland.com/news/local-news/oh-medina/drone-with-thermal-imaging-helps-medina-police-arrest-man-accused-of-stealing-ipads-iphones

6Dec21

Archer eVTOL Gets FAA Special Airworthiness Certificate

Miriam McNabb December 03, 2021 by DRONELIFE Staff Writer Ian M. Crosby

Today, Archer Aviation Inc. announced the Federal Aviation Authority has granted it a Special Airworthiness Certificate authorizing the company to begin flight testing its electric vertical takeoff and landing Maker aircraft.

Previously receiving its FAA G-1 Issue Paper: Certification Basis last September, Archer has worked to maintain a collaborative and transparent relationship with the FAA through the Administration's Center for Emerging Concepts & Innovation and the Los Angeles Aircraft Certification Office throughout the certification process.

The inspection of Archer's Maker took place at the company's California flight test facility, where the aircraft is undergoing final preparations for its first flight and safety testing. The FAA issued Archer its Special Airworthiness Certificate, indicating that Maker is safe to leave the ground and begin hover test flights.

"Our team has been working toward this moment, and it's a testament to their effort that we've completed the formal inspection of Maker and received our Special Airworthiness Certificate," said Adam Goldstein, Archer co-founder and co-

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CEO. https://dronelife.com/2021/12/03/archer-evtol-gets-faa-special-airworthiness-certificate-check-out-these-images/

Drones on Cape Cod: Skyports and MassDOT Partner to Connect Remote Communities

Miriam McNabb December 04, 2021

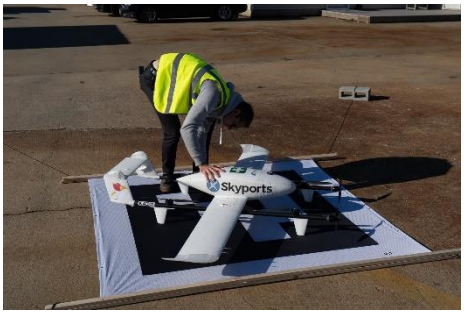
"MassDOT is investigating the uses of drones as a solution to connecting its remote communities to everyday services such as healthcare and logistics, and in particular is looking to develop a capability to provide emergency medical delivery after storms or other natural disasters."

Skyports drones "are capable of flying safely in harsh weather conditions and are able to carry varied cargo payloads up to 100 lbs," making them an ideal partner to reach remote communities on Cape Cod.

Skyports has been granted approval by the Federal Aviation Administration to operate beyond visual line of sight flights during a week-long feasibility project. The project will guide MassDOT as it explores broader BVLOS drone operations in Massachusetts such as rail network and road inspections.

Drones are already part of MassDOT transportation infrastructure programs. "MassDOT's Drone Program performs daily flights to support the MassDOT Highway, Rail and Transit, and Aeronautics Divisions, along with the Massachusetts Bay Transportation Authority that operates the subway and commuter rail lines," says the press release. "These flights inspect rail track, document the health of wetlands near construction sites, and map highway and airport projects.""

MassDOT turned to Skyports to demonstrate delivery flights across Vineyard Sound, between Woods Hole on Cape Cod and the island of Martha's Vineyard."



During the project, Skyports will complete a series of test flights. Following the completion of the project, Skyports plans to move into full scale permanent commercial operations in Massachusetts before expanding its operations across other states in the US. https://dronelife.com/2021/12/04/drones-on-cape-cod-skyports-and-massdot-partner-to-connect-remote-

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communities/

US defense department awards CACI 5-year counter drone R&D task order

December 6, 2021 Jenny Beechener Counter-UAS systems and policies

US Naval Surface Warfare Center, Crane Division under the Department of Defense Information Analysis Center has awarded a multiple-award contract to CACI to provide engineering research, analysis, and development of mission technology to enhance the capabilities of Counter Unmanned Aircraft Systems.

The task order will modernize components and systems on both manned and unmanned platforms including the EP-3E, P-8A, MQ-8, and MQ-25 UAS for the US Navy, US Army, US Air Force, and US Coast Guard. CACI will develop next generation technology for intelligence, surveillance, and reconnaissance and electronic warfare mission systems, and survivability systems while providing logistical support to meet operational demands.

John Menqucci CACI President and Chief Executive Officer, said, "Backed by the world's largest threat signals library and more than 1,200 systems deployed globally, CACI offers technology for any C-UAS challenge or mission. https://www.unmannedairspace.info/counter-uas-systems-and-policies/us-defence-department-awards-caci-5-year-counter-drone-research-and-development-task-order/

Volocopter establishes joint venture in Saudi Arabia to create public eVTOL mobility system

December 1, 2021 Jenny Beechener UAS traffic management news, Urban air mobility

Urban air mobility company Volocopter and Saudi Arabia's NEOM region have established a joint venture company to design, implement, and operate a public vertical mobility system. Air taxi and vertical logistics services will be integrated with the multi-modal zero-emission public transit system. The JV will be the operator of initial public transit routes while enabling an open eVTOL (electric Vertical Take-Off and Landing) ecosystem for logistics, emergency response, and tourism. NEOM has placed a confirmed order of 15 Volocopter aircraft to commence initial flight operations within the next 2-3 years.

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The collaboration between NEOM and Volocopter will lead the design and development of a three-dimensional public transportation system, advancing technical, regulatory, and infrastructure solutions for eVTOL operations. The JV will offer vertical mobility services as an integral part of NEOM's multi-modal and zero-emissions public mobility system, providing connectivity for passengers and goods. https://www.unmannedairspace.info/latest-news-and-information/volocopter-establishes-joint-venture-in-saudi-arabia-to-create-bespoke-public-evtol-mobility-system/

Rzeszów begins extensive drone testing with 160 flights by DroneHub 30.11.2021

An initial series of drone test flights over cities has been rolled out in Poland as part of an effort to speed preparations for the introduction of urban air mobility services and navigation systems across the European Union.

The first of those trials are underway in Rzeszów, a city of 200,000 people and home to the Dronehub drone-in-a-box equipment manufacturer. The project is funded by the EU's Horizon 2020 and the Single European Sky ATM Research Joint Undertaking. After Poland, the trial drone flights will take place in the Czech Republic, Great Britain, and Spain as research into safely integrating piloted and autonomous UAM activities within urban environments.

The project involves sensor and equipment supplier Honeywell and navigation and air traffic software partner Altitude Angel. Those companies are members of the Uspace4UAM consortium, which works to accelerate development of operational concepts, regulation, and standards for UAM operation across the EU.

The first phase of the trials in Poland will involve 160 flights in the Rzeszów area by mid-2022. Those will operate under three scenarios of autonomous drones flying public service missions. The first of those will replicate aerial monitoring of accident sites; the second to capture ortho- and photogrammetric photos for public institutions; and third to transport AED defibrillators in life-threatening situations. https://biznespolska.pl/poland-initiates-eu-wide-urban-drone-and-uam-test-flights/

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Japan's Wakkanai city region tests drone operations at an operational aerodrome December 3, 2021 Jenny Beechener UAS traffic management news, Urban air mobility

Japanese partners BIRD INITIATIVE, All Nippon Airways, ANRA Technologies, Ein Holdings, NEC and the Hokkaido Bureau of Economy, Trade and Industry of the Ministry of Economy, Trade and Industry demonstrated drone take-off and landing with scheduled manned aviation flights in accordance with official guidelines during November, reports the Japan Unmanned Aerial Systems Development Association. The operations follow guidelines published by the Ministry of Health Labour and Welfare, and the Ministry of Land, Infrastructure, Transport and Tourism, in June 2021 relating to the delivery of medicines by drone.

The cooperation between ANA and Hokkaido Airports resulted in the demonstration to operate a logistics drone at an airport coordinated with regular air flights. The purpose of the experiment was to verify the connection between drone logistics and air logistics.

These typical drone operations are designed to enable rapid and consistent transportation from rural areas to urban areas, and in the future, provide the basis to build a new hub-and-spoke distribution network centered on airports. The initiative also aims to promote industry in rural areas. https://www.unmannedairspace.info/latest-news-and-information/test-flights-in-japans-wakkanai-city-region-demonstrate-drone-operations-at-an-operational-aerodrome/

Prescriptions to fall from Utah's skies next year, with new drone deliveries Erin Alberty Nov. 11, 2021 The service will start in Salt Lake County in 2022, the company said.

A package with a parachute dropped from a Zipline aircraft in Rwanda.

Intermountain Healthcare is launching a drone-delivery service that it says will be able to fly drugs and home care equipment to hundreds of patients' homes each day in Utah.

Eventually, the delivery service — operated by Intermountain and San Francisco-based Zipline — will be able to "complete hundreds of deliveries each day and be capable of delivering to approximately 90 percent of patient homes in the region," according to a news statement Thursday by Intermountain. Zipline anticipates reaching full

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delivery capacity over the course of about four years, said Caroline Cammarano, a Zipline spokesperson.

The service will initially target patients within a 50-mile radius of a distribution center in Salt Lake County, with construction set to begin early in 2022. They plan to begin deliveries by midyear. The drones will parachute deliveries to patients' homes; Zipline says its drones can accurately drop packages onto an area "about the size of several parking spaces."

And Walmart this year planned to begin testing drone deliveries with Zipline near the retail giant's headquarters in Arkansas; a Zipline distribution center was being built in May in the town of Pea Ridge. Home deliveries in both North Carolina and in Arkansas are awaiting FAA approval. https://www.sltrib.com/news/2021/11/11/drones-will-drop-drugs/

Ascendance Flight Technologies unveils design of its Hybrid-Electric aircraft

December 5, 2021 News

Ascendance Flight Technologies builds on hybrid technology and distributed propulsion. After three years of R&D, the French start-up swings into action. It is unveiling the design of ATEA, its 5-seater vertical take-off and landing aircraft. Thanks to a range of 400 km, carbon emissions reduced by 80% and noise pollution divided by 4, ATEA blends sleek design with unprecedented "fan-in-wing" technology. Production is scheduled for 2025.

Equipped with hybrid engines developed by Ascendance Flight Technologies, ATEA is designed for a variety of uses, whether for passenger transport, emergency services, logistical tasks or for surveillance flights.

Modular hybrid-electric propulsion. "Lift + Cruise" configuration with 2 separate propulsion systems for vertical and horizontal flight. 8 rotors integrated into two fixed wings. 2 horizontal propellers. Skyview cabin and easy access for passengers.
https://uasweekly.com/2021/12/05/ascendance-flight-technologies-unveils-design-of-its-hybrid-electric-aircraft/?utm_source=rss&utm_medium=rss&utm_campaign=ascendance-flight-technologies-unveils-design-of-its-hybrid-electric-aircraft&utm_term=2021-12-06

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NYC Dept. of Buildings studies facade inspections by drones Bruce Crumley - Dec. 6th 2021

New York City's Department of Buildings has released a study on the potential use of drones for structural and facade inspections, judging the prospect promising yet not ready for deployment just yet.

The Department of Buildings investigated not only the practical and data advantages drone technologies can contribute to the NYC's Facade Inspection & Safety Program, but also the legal feasibility of deploying UAVs in the city. Its findings were something of a mixed bag, often highlighting the advantages of the approach while ultimately adopting a wait-and-see position as examinations continue – and laws restricting drone flights evolve.

In some places, the DOB's report nods to the circular manner in which NYC's strict drone laws prohibit most drone fights, which in turn severely limits real-life UAV use the authors might have otherwise drawn from. Though Federal Aviation Administration rules nominally apply, local city codes effectively ban leisure or commercial UAV operation in the five boroughs.

Yet in the wake of the 2019 death of an architect killed by debris falling from a West 47th Street building, the city passed the 2020 Local Law 102 requiring the DOB to examine the potential of drones in facade inspections. Given that, there may be reason to believe regulations could eventually be loosened for certain business and administration drone uses if airborne technology justifies it. That's the eventuality the report examines.

In doing so, it notes the ways UAVs can aid human inspectors, but also points out how manual scrutiny remains the gold standard – for now, anyway. The main criticism is that while drones can quickly and easily access places where façade deterioration has taken place, their sensors aren't yet sophisticated enough to replace the visual evidence human inspector gather themselves. https://dronedj.com/2021/12/06/nyc-dept-of-buildings-studies-facade-inspections-by-drones/#more-72850

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Liteye and Unmanned Experts Partner to Address Drone Swarms December 5, 2021

Counter UAS

Liteye Systems, based in Denver Colorado, has partnered with Unmanned Experts Inc. to provide the hardware components to ruggedize the new AIR COMMONS™ – SWARM, drone swarm asset planning, management, and control system.

AIR COMMONS™ SWARM technology enables command and control tasking, mission planning, and generation of a "Swarm Air Tasking Order" including resource allocation, asset-target matching, force management, and mission control. These capabilities enable US swarm commanders and tacticians to deploy overwhelming autonomous airpower faster than the enemy's decision-making cycle. The system is designed to fully integrate Unmanned Traffic Management, Advanced Air Mobility, Air Traffic Management, and UAS utilization and provide Air Domain Awareness within a disaster response or deployed Area of Responsibility.

"Swarming autonomous systems are the next technology to be addressed to secure dominance and air superiority," said Keven Gambold, CEO of Unmanned Experts, Inc. "AIR COMMONS has demonstrated control of 55 drones and this number continues to increase."
https://uasweekly.com/2021/12/05/liteye-and-unmanned-experts-partner-to-address-drone-swarms/?utm_source=rss&utm_medium=rss&utm_campaign=liteye-and-unmanned-experts-partner-to-address-drone-swarms&utm_term=2021-12-06

Aquiline Drones extends free online drone pilot training for all first responders

December 5, 2021 News

As festivities fire up this holiday season, so do the dangers to people and property. Holiday decorations, heating, winter storms and candles all contribute to an increased risk of fire during the winter months, according to the National Fire Protection Association. To help firefighters and police handle increased winter emergencies, Aquiline Drones, a commercial drone manufacturing and cloud technology company in Hartford, Connecticut, is giving them the gift of free drone pilot training to use drones in the line of duty.

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Any first responder can enroll in the company's online Flight to the Future flight training program from now until June 2022 and receive free tuition, valued at $399. To date, more than 500 police officers, firefighters and emergency medical technicians nationwide have enrolled in AD's proprietary drone training program.

The platform delivers location-based, cloud-hosted services to public safety field personnel, 911 operators, dispatch centers and command centers for improved communication, collaboration, and comprehension. AWARE is as useful to a small department as it is to a major urban disaster response and can be displayed on a tablet, vehicle's MDT, large screen, computer or smart phone.

The online course teaches police and fire professionals how to utilize drone and cloud technology– embedded with Artificial Intelligence in their daily missions. The educational content is available on-demand, so participants can take the course at their own pace and convenience. Besides earning their FAA Part 107 commercial drone pilot certification, program participants will also learn about cloud computing, AI, the Internet of Things and other technologies transforming the unmanned aerial vehicle industry.
https://uasweekly.com/2021/12/05/aquiline-drones-extends-free-online-drone-pilot-training-for-all-first-responders/?utm_source=rss&utm_medium=rss&utm_campaign=aquiline-drones-extends-free-online-drone-pilot-training-for-all-first-responders&utm_term=2021-12-06

DroneUp Acquires Airmap: Another Move Towards Drone Ops on a Very, Very Big Scale Miriam McNabb December 07, 2021

DroneUp has been instrumental in defining the boundaries of what can be accomplished within the confines of existing regulations, showing value while flying within visual line of sight. With a major investment from Walmart, DroneUp has secured a place on the front lines of drone delivery. Now, as DroneUp acquires AirMap, the company is buying technology that will enable them to push rapidly forward toward expanding drone services beyond visual line of sight.

"Ultimately achieving BVLOS operations at scale will not hinge upon a single airframe, software, or technology. Rather, it will be the careful aggregation of the very best solutions," DroneUp CEO, Tom Walker, tells DRONELIFE. "Already supporting 100,000 flights per day, Airmap's products will immediately impact our ability to scale operations. Additionally, the information

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collected will create safer skies and allow for insights and capabilities that can only have value with scale.

AirMap was one of the first, and most widely used, airspace intelligence systems, and the company evolved to enter the UTM space. AirMap's Unmanned Aircraft System Traffic Management service and comprehensive flight data "will help DroneUp establish market and regulatory leadership, and further advance safe last-mile drone services," says a company press release. https://dronelife.com/2021/12/07/droneup-acquires-airmap-another-move-towards-drone-ops-on-a-very-very-big-scale/

Embraer's Eve Cuts New eVTOL Deals in Australia Thom Patterson December 6, 2021

Embraer's Eve eVTOL aircraft is expected to include eight rotors and two propellers.

Embraer's (NYSE:ERJ) Eve Urban Air Mobility Solutions on Monday announced an order from Australian tourist airline Sydney Seaplanes to buy 50 electric vertical takeoff and landing (eVTOL) air taxis. The news helped drive the price of Embraer stock 5 percent higher as markets closed Monday. The deal calls for deliveries to begin in 2026.

"Eve will support this new partnership with aircraft operations, including air traffic management solutions, maintenance, training, and other services," said president and CEO of Eve Urban Air Mobility Andre Stein in a statement.

"Eve's eVTOL technology will integrate seamlessly with our electric amphibious fleet to deliver a range of tourism and commuter journeys," said Aaron Shaw, CEO of Sydney Seaplanes, in the news release. https://www.flyingmag.com/embraers-eve-cuts-new-evtol-deals-in-australia/

Astra to perform next launch from Cape Canaveral Jeff Foust — December 6, 2021

Astra will conduct its next launch from Space Launch Complex 46 at Cape Canaveral in January, flying a set of cubesats for NASA.

WASHINGTON — Astra announced that it will conduct a launch of its Rocket 3.3 vehicle from Space Launch Complex 46 at Cape Canaveral Space

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Force Station in January.

Astra said it will carry a payload for NASA on that flight but did not disclose additional details. A company spokesperson said this launch will be for NASA's Venture Class Launch Services (VCLS) program, under a VCLS Demo 2 contract the company won a year ago.

That launch, designated ELaNa 41 by NASA, will carry five cubesats, according to a NASA manifest. Four of the cubesats are from universities: BAMA-1 from the University of Alabama, CURIE and QubeSat from the University of California Berkeley and INCA from New Mexico State University. The fifth, R5-S1, is from NASA's Johnson Space Center.

Astra has conducted all its orbital launch attempts to date from Pacific Spaceport Complex Alaska on Kodiak Island, including, most recently, its first successful orbital launch Nov. 20. The Florida launch will be the company's next orbital launch attempt. https://spacenews.com/astra-to-perform-next-launch-from-cape-canaveral/

In militants' hands, drones emerge as a deadly new wild card in the Middle East

Joby Warrick, Souad Mekhennet, and Louisa Loveluck December 7, 2021

A destroyed vehicle remains in front of Iraqi Prime Minister Mustafa al-Kadhimi's residence following an assassination attempt by an armed drone in Baghdad

The assassins' weapon was a souped-up hobby drone, the kind that can be bought online for a few thousand dollars. It featured four helicopter-like rotors, an oversize battery, and a small bomb, compact but powerful enough to blow up a car or, potentially, to kill a head of state.

Investigators who studied fragments of the device — one of two drones that targeted the official residence of the Iraqi prime minister on Nov. 7 — quickly pinned the attack on powerful Iraqi militia groups backed by Iran. The bomb itself, experts concluded, was of a design previously linked to Iran.

A third finding came as a surprise to some analysts: Tehran did not authorize the attack, Iraqi officials concluded, and in fact strongly opposed it. Instead, the attempt on the life of Iraqi leader Mustafa al-Kadhimi appears to have been the work of private militias that are now

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armed with drones and feeling emboldened to carry out strikes with potentially catastrophic consequences — sometimes without waiting for approval from their ostensible sponsors.

Last month's attack has underscored what intelligence officials and analysts describe as a growing threat to stability in the Middle East and beyond: the proliferation of attack drones, particularly among paramilitary groups with close ties to Iran.
https://www.washingtonpost.com/national-security/iran-drones-iraq-militias/2021/12/06/5685e772-5469-11ec-8769-2f4ecdf7a2ad_story.html

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DRL GETS FAA APPROVAL AS OFFICIAL DRONE EVENT ORGANIZER December 7, 2021 Sally French

Today, the Drone Racing League announced that it has been accredited by the Federal Aviation Administration as the nation's first unmanned aircraft systems event organizer.

DRL also announced it would participate in the FAA's Partnership for Safety Plan Program, in which it will help establish a set of standard safety protocols for future organizations that want to use drones for demonstrations, air shows, exhibitions and other live events. DRL is among the biggest event organizers in the world, and with its experience running drone races worldwide in places like museums, arenas and historical landmarks, will help the process of developing and implementing drone event safety guidelines.

The news comes less than a month from what could be among the biggest drone races we've seen yet. DRL is set to host its DRL Algorand World Championship Season 2021-22 finale on Jan. 5, 2022 at the Las Vegas Strip. It will be an outdoor race course at the T-Mobile Arena, which is adjacent to the newly opened Park MGM Hotel. Since the event is free and open to the public in a wide-open, easily accessible location, it could potentially draw massive crowds.
https://www.thedronegirl.com/2021/12/08/drone-event-organizer-drl/

Airobotics Has Signed Agreement to Develop a New Drone for Solar Panels Cleaning December 6, 2021 News

Airobotics , an Israeli manufacturer of autonomous Unmanned Aircraft and Aerial Data Platforms, and Solar Drone, an Israeli company specializing in solar farms services, have signed an agreement under

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which Airobotics will develop and supply to Solar Drone a unique solar panel cleaning drone system. The fully automated system will include a drone docking station for automatic battery replacement and cleaning fluid replenishment, enabling the system to operate continuously.

Solar panel cleaning will soon become a multi-billion-dollar market. Dirt, dust, mud, and bird droppings greatly reduce solar panel efficiency, impacting power output. This means solar panels must be cleaned frequently, especially in dirty/dusty/bird-rich environments. Frequent cleaning is expensive and time consuming, especially when panels are remote, difficult to access or difficult to clean. Examples are floating solar farms (on water), rooftop panels and sun-tracking panels.

Airobotics and Solar Drone aim to leverage their expertise in drones and solar energy systems to create and market a new drone-based cleaning solution, forecasting sales of $10 million in the first three years in Israel, Europe, India and the UAE.
https://uasweekly.com/2021/12/06/airobotics-has-signed-an-agreement-to-develop-a-new-drone-for-solar-panels-cleaning/?utm_source=rss&utm_medium=rss&utm_campaign=airobotics-has-signed-an-agreement-to-develop-a-new-drone-for-solar-panels-cleaning&utm_term=2021-12-07

Zing Drone Delivery Announces Strategic Partnership with Airspace Link December 7, 2021 News

Zing Drone Delivery has partnered with Airspace Link to advance the integration of our drone delivery platform into communities and the national airspace.

Zing is a drone delivery platform that enables a pre-existing network of Part 107 licensed pilots to make deliveries using the most common consumer drones on the market. We provide autonomous flight software and unlike our competitors who reinvent the wheel, Zing transforms existing DJI drones into delivery drones with our plug-and-play hardware.

Headquartered in Detroit, Michigan, Airspace Link is the market leader in State and Local Government drone software, data exchange, and mapping – offering the most powerful geospatial cloud available and connecting the Federal Aviation Administration and the drone industry.

Since 2018, Airspace Link has helped customers unlock the full potential of ground and air data to improve safe drone operations in the national airspace and our communities. Airspace Link is an FAA approved UAS Service Supplier of the Low Altitude Authorization and Notification

Capability. The Airspace Link platform is an all-in-one, cloud-based platform simultaneously connecting all constituents involved in legally and safely flying a drone. Airspace Link solutions can scale to hundreds or even millions of people, pilots and drones interacting with it at the same time. https://uasweekly.com/2021/12/07/zing-drone-delivery-announces-strategic-partnership-with-uas-service-supplier-to-integrate-airspace-awareness/?utm_source=rss&utm_medium=rss&utm_campaign=zing-drone-delivery-announces-strategic-partnership-with-uas-service-supplier-to-integrate-airspace-awareness&utm_term=2021-12-08

H3 Dynamics-Powered Hydrogen Drone, Now Certified in Japan December 8, 2021

News

A hydrogen drone equipped with H3 Dynamics' AEROSTAK hydrogen fuel cell system, developed by Drone Works and with integration support by Nexty Electronics Co. Ltd., received official approval from the Japanese Minister of Economy, Trade and Industry on November 28, 2021. It is the first certified hydrogen fuel cell multi-rotor drone test flight in Japan.

The new generation hydrogen drone is equipped with a small composite container for high-pressure hydrogen developed by JFE Container Co. Ltd. The drone-compatible hydrogen fuel cell system is manufactured by H3 Dynamics, who has begun working with Toyota Tsusho Nexty Electronics for technical integration in Japan. Setting up its offices in Tokyo, H3 Dynamics has locations in Singapore, Paris, Toulouse and Austin that work on decarbonization of flight from small drones to large aircraft. The Company has recently closed a $26M series B financing, led by Mirai Creation Fund, managed by SPARX Group and representing the interests of Toyota Corporation and Sumitomo Banking Corporation. The fund specializes in investments relating to intelligent technologies, robotics, and hydrogen technologies.

By using lightweight hydrogen as the energy source, it is possible to fly for a much longer time than with lithium batteries. Hydrogen offers a stronger environmental solution to support decarbonization, especially as it can be produced from renewable energy or municipal waste. https://uasweekly.com/2021/12/08/h3-dynamics-powered-hydrogen-drone-now-certified-in-japan/?utm_source=rss&utm_medium=rss&utm_campaign=h3-dynamics-powered-hydrogen-drone-now-certified-in-japan&utm_term=2021-12-08

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Swoop Aero to make BVLOS medical drone deliveries in Queensland Bruce Crumley - Dec. 8th 2021

Just a week after the Melbourne-based company formalized its humanitarian supplies distribution partnership with UAVaid in Sierra Leone, Swoop Aero said it had been given permission to fly BVLOS drone deliveries of medical supplies by Australia's Civil Aviation Safety Authority.

The company will begin that activity later this month at the local airport in Goondiwindi, a town on the state's southern border with New South Wales. As a fully integrated operator of UAVs within the region's airspace, Swoop Aero will be able to stage automated drone deliveries of medical supplies to outlying areas while maintaining full air traffic safety relative to other aircraft.

CASA's authorization of BVLOS flights gives the green light to a project Swoop Aero first began planning in February, along with partners in the healthcare sector. Launch of those medical supply drone deliveries just now is even more significant due to flooding and other extreme weather-related events Goondiwindi and much of southern Queensland have suffered.
https://dronedj.com/2021/12/08/swoop-aero-to-make-bvlos-medical-drone-deliveries-in-queensland/#more-73022

Drone-Based LiDAR Scanning & Orthophotography for Archaeology Mike Ball / 07 Dec 2021

YellowScan has released a case study highlighting how its Surveyor Ultra UAV (unmanned aerial vehicle) LiDAR solution has been used to survey a historic monastery on an island in Lough Derg, Ireland. The data gathered is being used as part of an archaeological assessment of the monastery.

Read the full case study on YellowScan's website

Gaining access to the island can be challenging, and drone-based remote sensing allowed the aerial survey to be completed safely from the mainland. Projects such as these are often undertaken with photogrammetry alone, but a Digital Terrain Model was required to penetrate

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the vegetation and help identify any archaeological features under the canopy, so LiDAR scanning was required. https://www.unmannedsystemstechnology.com/2021/12/drone-based-lidar-scanning-orthophotography-for-archaeology/?utm_source=UST+eBrief&utm_campaign=0a07967a5d-ust-ebrief_2021-dec-7_engaged&utm_medium=email&utm_term=0_6fc3c01e8d-0a07967a5d-111778317&mc_cid=0a07967a5d&mc_eid=acabe18a61

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Australian tourist companies order 60 electric planes to launch air taxi services

LEVI PARSONS FOR DAILY MAIL AUSTRALIA , 7 December 2021

Sydney Seaplanes ordered 50 electric vertical take-off and landing aircraft from Brazilian aviation giant Embraer SA, while **Queensland** helicopter operator Nautilus signed up for 10.

The companies said they wanted to be at the forefront of the electric-powered transition that will provide zero emissions when charged with solar panels and cost far less than current gas-guzzling engines. The tourism operator is known for its seaplane daytrips from Rose Bay in Sydney Harbour to holiday spots like Palm Beach.

Pending regulatory approvals, the fleet is expected to be up and running by the first quarter of 2023, with the order of 50 electric planes set to take off by 2026. 'The environmental benefits are clear, with nil-emissions travel already technically possible on shorter journeys and with the exponential improvement in battery technologies range will continue to increase,' Sydney Seaplanes chief executive Aaron Shaw said.

'This will enable us to expand our electric services to other New South Wales and ACT destinations, including Canberra.' https://www.dailymail.co.uk/news/article-10282981/Sydney-Seaplanes-Australia-Nautilus-order-60-eVTOLs-electric-planes.html

General Atomics unveils new unmanned aircraft named for harsh American desert Jen Judson Dec 9

WASHINGTON — Reaper- and Gray Eagle-maker General Atomics Aeronautical Systems unveiled on Dec. 9 its newest unmanned aircraft system — Mojave — capable of handling much greater payloads and taking off and landing using short, undeveloped surfaces.

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Mojave essentially takes a Gray Eagle fuselage and adds enlarged wings with high-lift devices and a Rolls Royce 450-horsepower turboprop engine. The UAS is based on the avionics and flight control systems of the MQ-9 Reaper and the MQ-1C Gray Eagle-Extended Range.

"This started back when we were thinking of how to be runway independent," General Atomics Aeronautical Systems President David Alexander said during the briefing. Mojave "takes advantage of the high-lift wing with leading edge slats and double-slotted flaps and extra horsepower to do the job, and we think this is a very efficient way to get persistence and get it somewhat runway independent. It's got flotation tires and an extra strong landing gear."

The company tried a variety of ways to address the VTOL challenge, but to achieve a payload capacity even a Gray Eagle can't accommodate now, it came up with a more expeditionary solution.

Mojave's payload capacity is 3,600 lbs. and it can carry up to 16 Hellfire missiles. Other payload options are electro-optical/infrared, synthetic aperture radar/ground moving target indicator and signal intelligence. https://www.defensenews.com/land/2021/12/09/general-atomics-unveils-new-unmanned-aircraft-named-for-harsh-american-desert/

Electric Sky wins DARPA grant to work on focused power beaming system for drones December 8, 2021 News

A startup called Electric Sky says it's begun building its first Whisper Beam transmitter for providing tightly focused wireless power to drones in flight, thanks to a $225,000 award from the Defense Advanced Research Projects Agency.

The first phase of the project calls for building and testing a lab-bench demonstration system that would operate at short distances. Those experiments are expected to supply data that can be used to upgrade the system for higher power and longer distances.

Electric Sky has offices in the Seattle area as well as in Midland, Texas. Its CEO is Robert Millman, who previously served as general counsel for Jeff Bezos' Blue Origin space venture. Former XCOR Aerospace CEO Jeff Greason is the company's co-founder, chief technologist, and

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the inventor of the Whisper Beam system. The company's mission is to pioneer novel electric power and propulsion technologies for aircraft and flight vehicles of all sizes.

Electric Sky isn't the only venture focusing on wireless power for drones. Seattle-based PowerLight Technologies, for instance, is working on a laser-based system that could power up unpiloted aerial vehicles as well as 5G base stations. But Electric Sky's proprietary technology takes a different approach. https://uasweekly.com/2021/12/08/electric-sky-wins-darpa-grant-to-work-on-focused-power-beaming-system-for-drones/?utm_source=rss&utm_medium=rss&utm_campaign=electric-sky-wins-darpa-grant-to-work-on-focused-power-beaming-system-for-drones&utm_term=2021-12-09

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WINGCOPTER NETS 7-FIGURE INVESTMENT FROM JAPANESE VENTURE CAPITALISTS December 7, 2021 Sally French

Wingcopter is getting a boost from the opposite side of the world, as the Germany-based drone delivery company announced this month a 7-figure investment from Japanese venture capital company Drone Fund. This marks both the first time Drone Fund has invested in a German company and the first time it has invested in a company building eVTOL drone technology.

The exact amount of Japanese venture funding was not disclosed, though the figure came out of the company's Drone Fund III Investment Limited Partnership, which consists of $90 million and has about 50 other investments. Earlier this year, the company announced that it had received $22 million in Series A funding. Wingcopter already has deep ties with Japan. Last year, the company signed a partnership agreement with Japan's biggest airline ANA to build a drone delivery network.

Rather than employ its own operators, the company instead is building a global network of partners including drone operators, resellers, and agents that are trained and allowed to operate, promote, and distribute the Wingcopter 198.

Wingcopter's drones are known for their patented tilt-rotor mechanism, which allows the Wingcopter drones to take off and land vertically like a multicopter but can also morph into a

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fixed-wing aircraft enabling it to fly longer distances more efficiently and quickly, even in tough weather conditions like heavy rain and strong wind.

In June 2020, Wingcopter was named a Technology Pioneesr by the World Economic Forum in recognition of its social impact as part of the fourth industrial revolution, and separately were a finalist in the third annual AUVSI XCELLENCE Awards 2020. The company also holds a Guinness World record in speed for flying 150 mph. https://www.thedronegirl.com/2021/12/10/wingcopter-japanese-venture-capital/

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