UAS and SmallSat Weekly News

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14Sep19

Anthropology professor uses drones to fight malaria in Africa Haye Kesteloo Sep. 11th 2019

Oakland University Professor Jon Carroll went to Africa last summer to explore how drones can help in the fight against Malaria. He is using unmanned aircraft and software used for precision agriculture to support public health, environmental protection, food security, and other efforts. The Oakland University News reports:

The research team spent nine days in the East African nation of Malawi, where they collected data to assess the effectiveness of drone imagery in detecting areas of standing water – common breeding grounds for mosquitos, the chief transmitters of malaria. "You have to compare the aerial imagery with data collected on the ground," Carroll explained. "That's how you gauge the reliability of the drone photos."

Researchers hope drone imagery can help irrigation engineers and agriculturalists develop strategies that allow water to flow through irrigation schemes more efficiently, avoiding stagnation which enables mosquitoes to breed.

Africa is at the forefront of drone applications. The typically more lax regulations allow for drones to be used in a variety of ways currently not possible in Europe or the US. Zipline with its drone delivery system of medical supplies and blood samples is probably one of the best examples. The California-based company has successfully completed about 16,000 drone flights in Africa. https://dronedj.com/2019/09/11/drones-to-flight-malaria-in-africa/

Drones for headlights for new Audi EV off-road concept car Haye Kesteloo Sep. 11th 2019

Audi has used drones for headlights in a new electric vehicle concept car that was shown at the

2019 Frankfurt Motor Show. The new EV is called the Audi AI:Trail and like most concept cars, will likely never enter production. The design team at the German car manufacturer took things one step further on this vehicle and included five rotorless, triangular, battery-

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powered drones with integrated matrix LED lights to light up the path in front of the car.

Instead of conventional low beams and high beams, the Audi AI:TRAIL is equipped with a total of five rotorless, triangular, electrically operated drones with integrated matrix LED elements. They are capable of landing on a roof rack or directly on the roof of the vehicle, and docking onto inductive charging elements.

The flying objects are Audi Light Pathfinders, which generate their lift in the same way as bladeless fans produce their air flow. Thanks to their markedly lightweight design, they can fly ahead of the AI:TRAIL, consuming comparably little energy in the process and illuminate the path ahead, thereby replacing headlights entirely. If desired, the on-board cameras generate a video image that can be transmitted to the display in front of the driver via Wi-Fi, turning the Pathfinders into eyes in the sky. https://dronedj.com/2019/09/11/drones-as-headlights-audi/#more-19347

DJI Spark and DJI Mavic are now permanent part of LAPD's arsenal Haye Kesteloo Sep. 11th 2019

Cindy Chang writes for the Los Angeles Times:

Drones became a permanent part of the Los Angeles Police Department's crime-fighting arsenal Tuesday, despite opposition from privacy advocates who fear the remote-controlled aircraft will be used to spy on people.

On Tuesday, the five-member civilian Police Commission unanimously approved new regulations that enshrine the drones' use in specific situations, including active shooters, barricaded suspects and search warrants.

Drones "provide invaluable information to decision makers while decreasing the risk to human life," Moore wrote in a July 3 report, noting that everyone is safer when the devices check out a dangerous situation instead of officers going in blind.

The LAPD joins about 600 other law enforcement agencies around the country that use drones, according to a 2018 report by Bard College's Center For the Study of the Drone.

"We're committed to striking the right balance that … protects all of our community — their rights of privacy but also their public safety and their right to exist without threats of dangers

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that this tool can be used in some instances to mitigate." https://dronedj.com/2019/09/11/dji-spark-and-dji-mavic-are-now-permanent-part-of-lapds-arsenal/#more-19362

BP to extend North Sea drone methane monitoring Sep 11th, 2019

ABERDEEN, UK – BP has conducted tests with a drone to remotely monitor methane emissions west of Shetland.

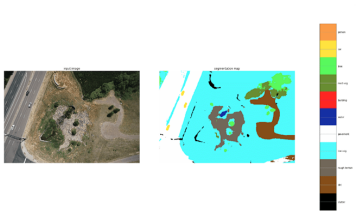
The pilot combined sensor technology originally designed by NASA for the Mars Curiosity Rover with a fixed-wing drone which circled the Clair field platform at a radius of 1,894 ft for 90 minutes.

In total, the droned travelled more than 115 mi, 53 mi farther than the UK's previous record for a commercial drone flight. Once the pre-programmed drone was airborne, it managed itself autonomously with the RPAS live-streamed data being collected by the methane sensor. The company plans to deploy the drone to its North Sea/Shetland area facilities next year.

Project manager, Joe Godwin, Clair field environmental lead, said: "We wanted to test a method for collecting large amounts of data on our emissions over long periods of time, without having to send people or equipment offshore.

"Ultimately, we identified the drone solution provided by UK supplier FlyLogix combined with sensor technology by SeekOps, as a good fit with our requirements. The drone was tracked and controlled remotely by three qualified pilots using satellite communications and a radio link from the island of Papa Stour, without the team having to leave their base onshore.
https://www.offshore-mag.com/production/article/14039652/bp-to-extend-north-sea-drone-methane-monitoring?mkt_tok=eyJpIjoiTVRBeU5qRmlNakJtTUdNdyIsInQiOiI5V1h1WDJ5OUJyMDVEMFI5R0c5bjBxdkJvVHRDVGN0a1ZHazJuQ1A3cFN2NGRYRkttakxweGdJTnJSZWpUOFV6bm5Yd1dxeGZRdXppMmluXC9NMFBZTlFHOEpsUmptdFRnVzdVb2ZJam9ueWhMb3o5ampEbFRVeUpzd1lVd3p5dkQifQ%3D%3D

AI and Machine Learning Enable Emergency Safe Landing Functionality September 11, 2019 News



Black Swift Technologies (BST), a specialized engineering firm based in Boulder, CO, announced today its revolutionary Automated Emergency Safe Landing functionality for UAS. The technology integrates state of the art machine learning algorithms and cutting edge onboard processors into the Black

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Swift S2™ UAS to capture and classify images, at altitude, enabling a UAS to autonomously identify a safe landing area in the event of a catastrophe—a key enabler for safe beyond line of sight flights. This solution processes large amounts of data quickly and efficiently to enable the identification of objects and terrain to be avoided in order to land the aircraft without harm to people or property.

"This technology uses video or still imagery of the ground to determine what those objects are (Figure 1), and classifies them as humans, vehicles, and/or structures—things you have to avoid at all costs, even if it's at the expense of the aircraft—to identify safe landing areas for a UAS in distress," states Brandon Gilles, CEO, Luxonis LLC. "Leveraging machine vision and artificial intelligence, AESL enables a human-like perception of the world where autonomy doesn't have to rely entirely on GPS, altimeters, or the like. This system can visually understand what's around it and make decisions accordingly, in real-time."

While AESL functionality can serve as a significant stepping stone towards obtaining FAA exemptions for safe beyond line of sight flights, what observers and users are describing as the most striking feature is the size of the components and their power requirements (which are quite low) for what's actually doing this image capture/processing onboard the aircraft.
https://uasweekly.com/2019/09/11/ai-and-machine-learning-enable-black-swift-technologies-emergency-safe-landing-functionality/?utm_source=newsletter&utm_medium=email&utm_campaign=uasweekly_daily_newsletter_09_12_2019&utm_term=2019-09-12

Deploy FlytWare Autonomous Drone Solution for Warehouse Inventory Counts

September 10, 2019 News

Cycle counting of warehouse inventory, a labor-intensive but high-value business activity, can now be done aerially, automatically and intelligently. FlytWare, an autonomous drone solution for indoor operations, is designed to be deployed for pallet and case reserve counts; be it freight forwarding sites, cargo storage facilities and warehouses – or – DCs, fulfillment centers and retail stores.

Traditional warehouses are being disrupted by global e-commerce, high-velocity supply chains, same-day delivery commitments, and intense cost pressures. Supply chain executives are keenly aware that digital transformation is not just a buzz word – without rapid technology adoption, their inventory operations will soon be obsolete. Expensive real estate is

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pushing warehouse managers to accept very narrow aisles and very tall racks, labor shortages are leading CXOs to embrace automation and customer SLAs are forcing 3PLs to higher frequency cycle counts. Shutting down picking/storage areas during working hours or doing incomplete cycle counts is simply not an option.

With FlytWare, inventory stakeholders can now adopt technology that is ready for production rollouts across dozens of sites and hundreds of drones. Having overcome the key challenges of indoor autonomous navigation, automatic barcode scanning and reliable, affordable hardware, FlytWare has advanced to a commercial solution that can be a) configured for various storage layouts, b) operated through an operator-friendly dashboard and c) integrated with API-enabled WMS. The operational success of FlytWare is driven by continuously refining the solution in close partnership with warehouse inventory and IT teams.
https://uasweekly.com/2019/09/10/deploy-flytware-autonomous-drone-solution-for-warehouse-inventory-counts/?utm_source=newsletter&utm_medium=email&utm_campaign=uasweekly_daily_newsletter_09_11_2019&utm_term=2019-09-11

Flirtey releases its new Eagle delivery drone and ground station Josh Spires Sep. 12th 2019

Drone delivery company Flirtey has released its new delivery drone and drone station at the National Press Club in Washington, D.C., with Senator Catherine Cortez Masto (D-NV) present.

Flirtey unveiled its new delivery drone, the Flirtey Eagle, along with the Flirtey Portal, on September 7. The Flirtey Eagle has been designed to fly in 95% of weather conditions and can fit 75% of packages in its compartment. Similar to Wing Aviation's design, the Flirtey Eagle also uses a tether to lower the package at the drop-off location.

The Eagle is flown using a custom-made autonomous software platform that has been given the go-ahead by the FAA as the first multi-drone delivery system to be approved in the US.

Flirtey Portal is the company's portable and safe drone launch station. It can go into a trailer and fit into a parking spot, allowing companies to move it as required.
https://dronedj.com/2019/09/12/flirtey-releases-its-new-eagle-delivery-drone-and-ground-station/

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Heathrow Pause protesters arrested and drone jamming technology used Haye Kesteloo Sep. 13th 2019

Today's protests at Heathrow Airport had been announced by the climate activists in the weeks leading up to the planned disruption, giving authorities ample time to prepare and take preventative measures.

Police have arrested eleven climate change activists, according to Sky News, including former Paralympian, James Brown. Nine of the protesters, including Extinction Rebellion's co-founder Roger Hallam, were already apprehended on Thursday. Two more were arrested on Friday morning.

The climate change activists failed to execute their Heathrow Pause air traffic disruption at England's largest airport earlier today. Signal jamming technology prevented their drones from taking off this morning. Although the activists claim that at least one drone flight was successful.

According to TechCrunch, Heathrow Pause had up to 200 volunteers ready to fly toy drones within the 3.1-mile no-fly zone around the airport. The protesters had said they would use small drones, flying them at head height outside of the flight paths. Heathrow Airport reportedly said in a statement:

"Heathrow's runways and taxiways remain open and fully operational despite attempts to disrupt the airport through the illegal use of drones in protest nearby. We will continue to work with the authorities to carry out dynamic risk assessment programs and keep our passengers flying safely on their journeys today."

"We agree with the need for climate change action but illegal protest activity designed with the intention of disrupting thousands of people, is not the answer. The answer to climate change is in constructive engagement and working together to address the issue, something that Heathrow remains strongly committed to do."

"Thank you to our brave pilots . There are more of us ready to take their place. We will not stand by and allow this planet killing monstrosity to expand."
https://dronedj.com/2019/09/13/heathrow-pause-drone-jamming-technology/

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15Sep19

Terra Drone Demos UAVs with Mitsubishi Estate for Urban Area Logistics and Security September 12, 2019 News

Japan-headquartered Terra Drone Corporation in collaboration with real estate giant Mitsubishi Estate, has successfully conducted a pilot test in the city of Tokyo to showcase how unmanned aerial vehicles can be used in urban environments to aid logistics, security and surveillance, and disaster prevention.

The demonstration was conducted in one of Japan's leading business centers – the Marunouchi area of Tokyo. Leveraging Terra Drone's homegrown unmanned traffic management system, a drone flew autonomously at an altitude of 2.5 meters, navigating seamlessly between the high-rises of Marunouchi. The UAV captured aerial footage and relayed it back to a control room where analysts monitored the video to detect issues like logistical bottlenecks and security threats.

The test flight was organized as part of the 'Marunouchi UrbanTech Voyager' initiative by Mitsubishi Estate. The aim of the project is to transform the Marunouchi district into a business and innovation hub by utilizing artificial intelligence, Internet of Things and robotics. This demonstration was aimed to showcase how a robust UTM system can not only avoid collisions but also realize the efficiency of logistics and security operations in everyday towns.
https://uasweekly.com/2019/09/12/terra-drone-demos-use-of-uavs-with-mitsubishi-estate-for-urban-area-logistics-and-security-in-tokyo/?utm_source=newsletter&utm_medium=email&utm_campaign=uasweekly_daily_newsletter_09_13_2019&utm_term=2019-09-15

Valqari to Launch First 5G Connected Drone Delivery to Smart Mailbox on Sprint Network September 12, 2019 News

Valqari, creator of the patented Smart Drone Delivery Mailbox and provider of last inch solutions for drone deliveries, has teamed up with Sprint to become the first smart mailbox to connect to their HTC 5G Hub. To showcase this cutting-edge advancement, Valqari's technology will be demonstrated at the opening of Curiosity™ Lab at Peachtree Corners on September 11th. Located in Peachtree

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Corners, GA, this new, real-world testbed offers 5G connectivity powered by Sprint and a 1.5-mile autonomous vehicle test track which will be used for the Valqari test delivery.

Valqari's Smart Drone Delivery Mailbox will use 5G LTE connectivity to ensure seamless communication with drones for a fully-automated delivery process while also providing a reliable, universal drone receptacle for package delivery and pick-up.

Ryan Walsh, CEO and co-founder of Valqari, said, "The technology in our Smart Drone Delivery Mailbox provides everything from a full chain of custody and security to authentication and protection from outside elements. Being connected to HTC 5G Hub will allow real-time communication with any drone so delivery locations can easily be identified."
https://uasweekly.com/2019/09/12/valqari-to-launch-first-5g-connected-drone-delivery-to-smart-mailbox-on-sprint-network/?utm_source=newsletter&utm_medium=email&utm_campaign=uasweekly_daily_newsletter_09_13_2019&utm_term=2019-09-13

XAG deploys crop-spraying drones to successfully protect 20m hectares

AGRICULTURE APPLICATION HEADLINE NEWS INTERNATIONAL ALEX DOUGLAS SEPTEMBER 13, 2019

XAG's crop spraying drones have operated in 38 countries including South Korea, Japan, Australia, Vietnam, Brazil, Mexico, Zambia, etc. Up to September 11, the company's total drone service record has exceeded 20 million hectares, which is 400% higher than that of a year ago.

This August, XAG conducted a record-breaking, single-day operation on 140,000 hectares of farmlands, marking a milestone in the global UAS crop protection industry. XAG says its 20-million-hectare service record indicates farmers' strengthened trust on the new technology.

The precision spraying solutions have been applied to safeguard a wide range of crops, including maize, cotton, rice, wheat and fruit trees, from harmful weeds and pest diseases.
https://www.commercialdroneprofessional.com/xag-deploys-crop-spraying-drones-to-successfully-protect-20m-hectares/?utm_source=Email+Campaign&utm_medium=email&utm_campaign=45819-312044-Commercial+Drone+Professional+DNA+-+2019-09-13

16Sep19

Amazon EXPANDS its secret UK drone testing site in the Cambridgeshire countryside

JO RILEY and RICHARD SPILLETT FOR MAILONLINE 13 September 2019

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The company quietly began testing drones in a field near Cambridge three years ago after the Civil Aviation Authority lifted strict drone flying restrictions. Engineers moved in on the farm land three years ago, but for the first two years just used a small strip of grass to practice take offs and landings.

This year however, the scale of activity has quickly increased. On site of the farm buildings, an area the size of a football pitch is being used for practice flights, while on the other side, a rig with motion sensors has been put up, apparently to test the precision of the drone's flight.

The firm recently advised for new hardware and software experts to help with its 'Prime Air' project. It is thought the company is stepping up testing as the project nears fruition.

Jeff Wilke, CEO of Amazon Worldwide Consumer, said they had been working hard to build fully electric drones which could fly up to 15 miles and deliver lightweight packages to customers in less than 30 minutes. He said the new 'hybrid' drone design could do vertical take-offs and landings like a helicopter and was also efficient and aerodynamic like an aeroplane.

He added: 'Our drones are safe, efficient, stable, and good for the environment. We know customers have high standards, so we set a high bar for Prime Air. And we're excited to be nearing our goal.' https://www.dailymail.co.uk/news/article-7460463/Amazon-EXPANDS-secret-UK-drone-testing-site.html

Swiss, U.S. Companies Offer Drone Weather Forecasting *Sep 13, 2019* Bill Carey | *The Weekly Of Business Aviation*

Meteodrone Severe Storms Edition hexacopter: TruWeather Solutions

Swiss company Meteomatics and TruWeather Solutions of the U.S. have formed a partnership to provide “hyperlocal” weather forecasting using data-gathering drones to support commercial drone operations. Announced Sept. 10, the strategic business alliance combines Meteomatics’ drone-gathered micro weather data with TruWeather’s business analytics and knowledge of the unmanned aircraft systems industry. https://aviationweek.com/awinbizav/swiss-us-companies-offer-drone-weather-forecasting

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WATCH: Lincolnshire Police drone team guides in dog to detain suspected car thief EMERGENCY SERVICES HEADLINE NEWS UK VIDEO ALEX DOUGLAS on SEPTEMBER 16, 2019

On social media, the force published video along with accompanying text detailing the events.

The drone team tweeted: “After a burglary in Skegness last night, a vehicle was stolen and rammed pursuing officers. It later crashed, and the occupant ran off. He was located by thermal drone in total darkness trying to hide behind s tree trunk. Later chased and detained by @LincsPoliceK999 #teamwork”

An additional tweet said: “WATCH. From last night PD Boris and handler @LincsPoliceK999 being guided in to a suspect from a vehicle stolen in a burglary, then detain him when he breaks cover and runs. Great teamwork all round and one of our team’s very best results. #RightToolsForTheJob #PolicingWithPRIDE”

Watch the footage here: https://www.commercialdroneprofessional.com/watch-lincolnshire-police-drone-team-guides-in-dog-to-detail-suspected-car-thief/?utm_source=Email+Campaign&utm_medium=email&utm_campaign=45819-312158-Commercial+Drone+Professional+DNA+-+2019-09-16

HAPSMobile sees success with completion of first HAWK30 test flight at NASA center APPLICATION INTERNATIONAL NEWS ALEX DOUGLAS SEPTEMBER 16, 2019

HAWK30 is designed to serve as a stratospheric telecommunications platform for delivering next-generation global connectivity.

After achieving NASA’s requirements for ground and range safety, on September 9, HAPSMobile received a limited flight release from NASA’s Airworthiness and Flight Safety Review Board to conduct a test flight of the HAWK30 aircraft in restricted airspace at AFRC.

HAPSMobile plans to transport HAWK30 to the Hawaiian island of Lanai and will accelerate preparations to perform stratospheric test flights in the fiscal year ending March 31, 2020.

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Junichi Miyakawa, president & CEO of HAPSMobile, said: "HAWK30 is a solar-powered unmanned aircraft designed to provide a high-altitude communications platform and will be used to provide telecommunications connectivity from the stratosphere as an airborne base station. While this successful test flight represents just the first step, we're moving forward with tests in the stratosphere and long flight duration tests lasting several months up to half a year." https://www.commercialdroneprofessional.com/hapsmobile-sees-success-with-completion-of-first-hawk30-test-flight-at-nasa-center/?utm_source=Email+Campaign&utm_medium=email&utm_campaign=45819-312158-Commercial+Drone+Professional+DNA+-+2019-09-16

Drone delivery services growing at extraordinary rate – new Unmanned Airspace survey

September 11, 2019 Philip Butterworth-Hayes UAS traffic management news

The drone delivery market has undergone a period of extraordinary growth over the last six months, with 45 countries now implementing or planning to implement drone delivery services, according to the latest survey by *Unmanned Airspace*.

The survey has broken the market into five sub-markets: freight & logistics; industrial; medical deliveries; post & parcels deliveries; retail. While the medical delivery sector is currently the most active of these submarkets, there has been considerable growth in retail deliveries and freight & logistics.

In particular, the last few months have seen a rapid growth in the number of projects involving drones transporting freight over seas and oceans.

- The first long-range unmanned UAV delivery in the Bahamas was made on June 18, 2019.
- Also in June 2019, the Indonesian airline Garuda announced it will operate 100 Chinese Beihang BKZ-005 drones delivering freight to remote islands.
- In July, Rakuten partnered with Japanese supermarket chain Seiyu to test drone delivery service, delivering products to Sarushima island in Tokyo Bay
- In August, Canada Post, in partnership with London Drugs and InDro Robotics, completed Canada's first BVLOS flight carrying pharmaceuticals via drone from a London Drugs pharmacy to remote Salt Spring Island in British Columbia.
- In September 2019, a consortium of FlyLogix, Total, NATS, Oil & Gas Technology Centre launched a drone inspection and logistics service in the North Sea.

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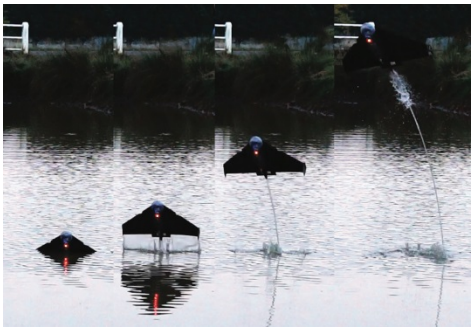
While China is leading the way in the scale, number and complexity of operations, Canada and the USA are also increasing their drone delivery services, though many of the USA's programs are still in the experimental, rather than fully operational phase. Iceland's Aha Flytrex retail drone delivery network in Reykjavik continues to expand with tests underway on more water-proofed drones. New generations of larger, freight carrying drones with longer ranges are also entering the market. But it has not been all plain sailing. In August 2019, Swiss Post grounded its delivery drone operation following a second crash.
https://www.unmannedairspace.info/uncategorized/drone-delivery-services-growing-at-extraordinary-rate-new-unmanned-airspace-survey/

Water Jet Powered Drone Takes Off With Explosions 12 Sep 2019 Evan Ackerman



Composite image of the drone in floating, jetting, and flying mode.

At ICRA 2015, the Aerial Robotics Lab at the Imperial College London presented a concept for a multimodal flying swimming robot called AquaMAV. It applies as much concentrated power as possible using a jet thruster to hurl the robot out of the water with quite a bit of velocity to spare.

In a paper appearing in *Science Robotics* this week, the roboticists present a fully operational robot that uses a solid-fuel powered chemical reaction to generate an explosion that powers the robot into the air.

The water jet coming out the back of this robot aircraft is being propelled by a gas explosion. The gas comes from the reaction between a little bit of calcium carbide powder stored inside the robot, and water. Water is mixed with the powder one drop at a time, producing acetylene gas, which gets piped into a combustion chamber along with air and water. When ignited, the acetylene air mixture explodes, forcing the water out of the combustion chamber and providing up to 51 N of thrust, which is enough to launch the 160-gram robot 26 meters up and over the water at 11 m/s. It takes just 50 mg of calcium carbide (mixed with 3 drops of water) to generate enough acetylene for each explosion, and both air and water are of course readily available. With 0.2 g of calcium carbide powder on board, the robot has enough fuel for multiple jumps, and the jump is powerful enough that the robot can get airborne even under

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fairly aggressive sea conditions. https://spectrum.ieee.org/automaton/robotics/drones/water-jet-powered-drone-takes-off-with-explosions

AI drone fleet Co. vHive raises $5.5m 11 Sep, 2019 Globes correspondent

Israeli AI company vHive announced today the completion of a $5.5 million financing round led by Octopus Ventures, with participation from existing investors StageOne Ventures and private investors. vHive has developed a software solution that enables enterprises to digitize their field assets and operations using autonomous drone hives.

Founded in 2016, vHive's mission is to be a trusted partner that enables enterprises to digitally transform by capturing data from the field and applying analytics to generate actionable business insights.

Since its seed investment, vHive has attracted Fortune 500 companies who use its software platform across a variety of industries and geographies. The company has enabled its customers to conduct thousands of drone surveys in industries such as cell towers, construction, insurance and rail. https://en.globes.co.il/en/article-ai-drone-fleet-co-vhive-raises-55m-1001300277

17Sep19

Wall Street Journal Cartoon

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DJI Expands Mapping & Surveying Solutions Malek Murisonon: September 17, 2019

DJI has announced a raft of product news at the INTERGEO conference in Stuttgart, Germany. The updates from the drone industry's leading manufacturer are aimed at improving the company's surveying tools.

The new products and updates include:

Matrice 210 RTK V2 + Zenmuse X7

A new package that combines a rugged aerial platform with precise surveying with an industry-leading camera. DJI will be hoping this versatile solution sets the standard for surveying, photogrammetry models and centimeter-level accuracy.

DJI has also introduced a range of updates to its mapping software, Terra. The expanded capabilities look set to accelerate data processing, improve mapping accuracy and streamline operations. Some of the new features include:

● Ground Control Points and Checkpoints can be set to achieve high accuracy reconstructions using drones that are not RTK-enabled.

● Render and visualize a 3D point cloud in real-time for quick decision making on-site and 3D flight planning.

● A new Corridor Mission Plan creates automated flight missions around roads and railways when the user simply draws a line on the map.

● Users can now convert maps and models into 8500+ global coordinate systems based on their needs. https://dronelife.com/2019/09/17/dji-expands-mapping-surveying-solutions/

Irish university makes BVLOS insulin drone delivery in aviation first APPLICATION DELIVERY EUROPE HEADLINE NEWS HEALTH ALEX DOUGLAS SEPTEMBER 17, 2019

From Connemara Airport to Inis Mor on the Aran Islands, the drone was given special research permission from the Irish Aviation Authority to show the possibility of future deliveries of this kind with planned drone corridors.

The completion of the flight meant it became the first

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autonomous BVLOS Vodafone connected VTOL drone delivery of prescription medication and collection of patient blood sample for diabetes care.

The IoT-connected drone delivery operated in between commercial flights and was in contact with air space regulators at all times, showing the possibility of future deliveries of this kind within planned drone corridors.

The NUI Galway led #DiabetesDrone project was run in partnership with several industry experts and stakeholders including, Skytango, Survey Drones Ireland, Wingcopter, Vodafone Ireland and global healthcare company Novo Nordisk, which Novo Nordisk, the world's largest insulin manufacturer, supplied the glucagon and insulin for the mission. https://www.commercialdroneprofessional.com/irish-university-makes-bvlos-insulin-drone-delivery-in-aviation-first/?utm_source=Email+Campaign&utm_medium=email&utm_campaign=45819-312276-Commercial+Drone+Professional+DNA+-+2019-09-17

Quantum-Systems unveils new UAV with flight time in excess of 90 minutes

BUSINESS EUROPE INTERNATIONAL NEW PRODUCTS NEWS ALEX DOUGLAS SEPTEMBER 17, 2019

It has a flight time of over 90 minutes and offers a long range telemetry solution of up to 7.5 km and PPK capabilities for more accuracy. Featuring new motors and increased battery capacity, it also allows for the accommodation of payloads of up to 700g.

Flight safety is increased by the automatic integration of live air traffic info into QBase3D, the included software for mission planning, monitoring and post-processing. The UAV pilot now receives high-quality tracking data from other aircraft around him to increase its operational awareness significantly.

For surveyors and other professionals requiring data to centimeter precision, the Trinity F90+ enables them to reduce typical GNSS geotagging errors of several meters down to 2 – 5 cm via auxiliary GNSS data collection in flight. https://www.commercialdroneprofessional.com/quantum-systems-unveils-new-uav-with-flight-time-in-excess-of-90-minutes/?utm_source=Email+Campaign&utm_medium=email&utm_campaign=45819-312276-Commercial+Drone+Professional+DNA+-+2019-09-17

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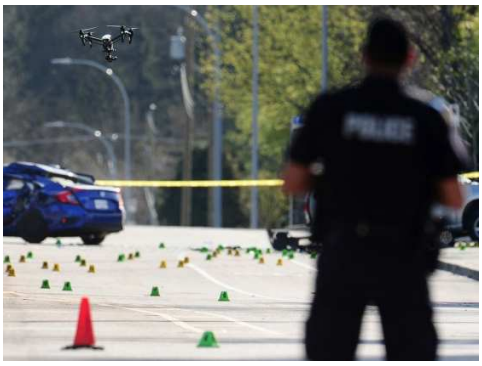
18Sep19

Vancouver police buys its first three drones for investigations but not surveillance SUSAN LAZARUK September 17, 2019

Vancouver police have bought their first camera-equipped drones to be used to investigate car crashes, analyze crime and disaster scenes, and for search-and-rescue, despite "concern" over using them to surveil citizens. The VPD prepared a "privacy impact assessment" with input from B.C.'s privacy commissioner and the B.C. Civil Liberties Association to ensure the operation of the drones doesn't invade citizens' privacy. The privacy commissioner noted the force's proposed use also includes incidents that include hostage situations, active deadly threat scenarios, high-risk warrants, a suicidal person or barricaded suspects.

The three drones, one large one that cost $100,000, and two smaller ones that, with training, cost the force about $40,000, have been purchased and are awaiting approval from the Vancouver Police Board.

Drones will primarily be used in crashes where they provide "unique points of view" for investigation and reconstruction. And they can record footprints and tire treads before investigators arrive on scene and evidence "not apparent to the human eye."



An RCMP drone photographs evidence at the scene of a shooting at 100th Avenue near 156th Street in Surrey on April 2, 2019

The drones will also fly over large public events for crowd monitoring with the goal of "maintaining and improving public safety" and to direct officers on the ground to criminal acts. https://vancouversun.com/news/local-news/vancouver-police-bought-its-first-three-drones-for-investigations-but-not-surveillance

Delair Introduces Unlimited Plan for Cloud-Based Drone Photogrammetry Miriam McNabb September 18, 2019

The announcement is interesting for several reasons. Delair has been a major industry player for a long time. Originally known as a drone manufacturer, Delair is one of the largest

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examples of a company shifting its focus to meet the needs of their large enterprise customers. Delair is now described as a leading provider of visual data management solutions – a real example of shifting focus from drone hardware towards the elements most valuable to enterprise: the data, and the associated workflows.

Secondly, while unlimited subscription-based plans are common for large enterprise software offerings, like customer management programs or ERP systems, they're relatively rare in the drone industry. That Delair has introduced the plan is a testament to the scaling of drone operations in enterprise organization and the amount of data that those operations are producing. *See the Delair press release:* https://dronelife.com/2019/09/18/scaling-drone-data-delair-introduced-unlimited-plan-for-cloud-based-drone-photogrammetry/

DRONEII's Kay Wackwitz on Hype vs. Optimism in the Drone Industry Miriam McNabb September 18, 2019

Kay Wackwitz, Founder and CEO of DRONEII, leading drone industry market consultants, says the hype around commercial drones is over – but that's a good thing.

When the DRONEII researchers polled for optimism about the drone industry, they found that it had palled slightly since last year. Somewhat humourously, the market segment that is most optimistic about their outlook is the counter-drone segment.

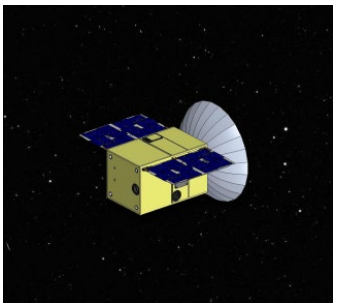
While last year, rule-making authorities were considered the main market influencer, in 2019 they dropped to second place. Respondents saw providers of end-to-end solutions as the primary influencers. DRONEII predicts the market will reach $43.1 billion by 2024 – and that's certainly reason for industry watchers to remain optimistic.

While 2018 was a challenging year for companies seeking investment, Wackwitz says the environment will improve: "2018 was a difficult year, but the trust in the market is still strong, and the investments are still there. The industry is still growing." He sees next year's investment landscape as being smaller in number of investments, but with larger dollar values.

In conversation after the presentation, Wackwitz says that the lack of hype isn't bad for the industry: "It may be harder to sell drones without the hype, but what's being sold now is a better product. We have an exciting time ahead of us – all the lights are still on green." https://dronelife.com/2019/09/18/droneiis-kay-wackwitz-on-hype-vs-optimism-in-the-drone-industry/

19Sep19

Cubesat Mission Will Be First to Fly Lunar Gateway's Unusual Orbit Samantha Mathewson 18Sep19 Spaceflight



The Cislunar Autonomous Positioning System Technology Operations and Navigation Experiment (CAPSTONE) will operate in a near-rectilinear halo orbit around the moon.

NASA has partnered with Advanced Space of Boulder, Colorado, to develop a cubesat satellite that will launch to the same lunar orbit targeted for the agency's Gateway outpost. The satellite is scheduled to launch as early as December 2020 and will be the first spacecraft to operate in a near-rectilinear halo orbit around the moon.

The lunar Gateway space station will provide an orbiting base around the moon from which astronauts can descend to the lunar surface or go farther into space. It is a key element of NASA's Artemis program, which plans to land astronauts near the moon's south pole by 2024.

CAPSTONE will help pave the way for the Gateway outpost and a crewed lunar return in 2024 by demonstrating how to enter into and operate in the same unusual lunar orbit Gateway is meant to use. The satellite will also test a new navigation capability, according to the statement. https://www.space.com/cubesat-mission-test-lunar-gateway-orbit.html

Lawmakers Seek Ban on Chinese Drone Purchases by Federal Agencies *Katy Stech Ferek Sept. 18, 2019*

An employee of Chinese Technology company DJI holds a DJI Mavic 2 Pro drone

WASHINGTON—A bipartisan group of lawmakers introduced legislation on Wednesday that would bar federal agencies from buying drones from China and any other country deemed a national-security risk. The bill, the American Security Drone Act of 2019, would ban federal departments and agencies from purchasing any commercial off-the-shelf drone or small unmanned aircraft system manufactured or assembled in China or other countries identified for national-security concerns. Federal officials would have 180 days to stop using them. The legislation, led by Sen. Rick Scott (R., Fla.), would also block local police forces and other law-enforcement agencies from using federal money to buy the banned drones.

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"Relying on drones made by our adversaries is a clear risk to our national security," Sen. Tom Cotton (R., Ark.), another sponsor, said in a statement. He added that Chinese manufacturers have "stolen sensitive drone technology from America's businesses and military for years and now sells it back to us." The bill is also sponsored by Sens. Chris Murphy (D., Conn.), Josh Hawley (R., Mo.), Marco Rubio (R., Fla.) and Richard Blumenthal (D., Conn.).
https://www.wsj.com/articles/lawmakers-seek-ban-on-chinese-drone-purchases-by-federal-agencies-11568818826

The H-Aero Aircraft, This You've Got to See Miriam McNabb September 19, 2019

When you first see the h-aero™ aircraft in flight, it's hard not to think of the old Superman theme: *It's a bird, it's a plane, wait, wait, it's…* That's because h-aero defies an easy, one word definition. The combination of balloon, helicopter, and airplane – flown remotely, so the word drone works too – doesn't look exactly like anything else on the market. Dr. Scaba Singer, one of h-aero's founders, says that's the idea.

At this week's InterGeo Conference in Stuttgart, the h-aero flew around the floor indoors, and over people's heads, and in perfect safety – because the floating balloon is lightweight, maneuverable, and very quiet. The h-aero combines the characteristics of a balloon, helicopter and airplane keeping the advantages of each while leaving behind the disadvantages.

h-aero™ is the result of 20 years of research at Stuttgart University and the German Aerospace Centre. They're one of the first companies in Europe to receive certification for flight over people and sensitive areas. h-aero isn't only quiet and safe, it has practically limitless endurance and can handle a wide variety of payloads. "It's a low-altitude, pseudo satellite," says Singer.

One exciting project is creating aerial 3D reconstruction of antique buildings. h-aero's design is safe to use inside priceless heritage buildings, where it cannot damage the structure by accidentally brushing against a surface. You can get better 3D models because you can get close.

Since the aircraft can carry multiple sensors at the same time, applications in agriculture and forestry, search and rescue, surveillance and inspections abound. It isn't perfect for every

mission. They aren't the right solution for wind or rough weather. Despite obvious military applications, the company is developing it first for the civil market, which will help them lower their risk while increasing their learning curve.https://dronelife.com/2019/09/19/from-the-floor-at-intergeo-the-h-aero-aircraft-this-youve-got-to-see/

NSF Announces Regional Testbed Dedicated to UAS Integration Betsy Lillian

September 18, 2019

A new regional testbed spanning areas of North Carolina will focus on wireless communications for vehicular and unmanned aircraft systems.

This testbed marks the third award announced by the National Science Foundation for its Platforms for Advanced Wireless Research (PAWR) program. In collaboration with an industry consortium of 30 networking companies and associations, NSF is supporting the development and deployment of a new PAWR platform based in Raleigh and Cary, N.C. that will power research on wireless communications for UAS and ground mobility at a regional scale.

AERPAW will be an aerial wireless experimentation platform with goals of accelerating the integration of UAS into national airspace and enabling new, advanced wireless features for UAS platforms, such as flying base stations for rapidly deployable wireless connectivity. As part of this effort, AERPAW will develop a software-defined, reproducible and open-access advanced wireless platform with production-like networking and experimentation features spanning 5G technologies and beyond.

AERPAW is led by North Carolina State University, in partnership with the Wireless Research Center of North Carolina, Mississippi State University and the Renaissance Computing Institute. Additional partners are the Town of Cary, the City of Raleigh, the North Carolina Department of Transportation, Purdue University, the University of South Carolina, and other academic, industry and municipal organizations. https://unmanned-aerial.com/nsf-announces-regional-testbed-dedicated-to-uas-integration?utm_medium=email&utm_source=LNH+09-19-2019&utm_campaign=UAO+Latest+News+Headlines

20Sep19

Walgreens to test drone deliveries with Google's Wing in Va. Town Tom Murphy Associated Press

Walgreens and a Google affiliate are testing drone deliveries that can put drugstore products on customer doorsteps minutes after being ordered.

Snacks like Goldfish Crackers or gummy bears as well as aspirin for sick kids will be delivered next month in Christiansburg, Virginia, by a 10-pound drone flying as fast as 70 mph, the companies said Thursday.

Customers will be able to order from a list of more than 100 items that includes individual consumer goods and packages of products to help with things like coughs and colds, but not prescriptions. They will place their order through a Wing app and then get delivery anywhere from five to 10 minutes afterward.

A drone capable of making a 12-mile round trip will fly to the delivery site, hover and use a winch system to lower the package to the ground and leave it there. The drone will be run by Wing Aviation LLC, a subsidiary of Google parent Alphabet Inc.

Walgreens and Wing picked Christiansburg for their test because Wing has been working with nearby Virginia Tech on drone deliveries. The test comes as Walgreens, based in Deer-field, Illinois, and rival CVS Health Corp. also work to expand same-day deliveries of prescriptions and other products on the ground. https://digital.olivesoftware.com/olive/odn/virginianpilot/

Boeing, Navy Conduct First MQ-25 Unmanned Tanker Test Flight Jane Edwards September 20, 2019 News, Technology

Boeing and the U.S. Navy completed the initial flight test of the MQ-25 unmanned aerial refueling platform.

The company said Thursday its test pilots at a ground control station at an airport in Mascoutah, Ill., evaluated the takeoff, taxi and other flight functions of the drone test asset, dubbed T1, during the two-hour test flight.

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In August 2018, Boeing won a potential $805M contract to build four MQ-25 carrier-based drones for the Navy. The unmanned aircraft is designed to increase the range of the military branch's deployed fighter jets through its refueling capability.

The Federal Aviation Administration issued an experimental airworthiness certificate to the T1 test asset in September. https://www.govconwire.com/2019/09/boeing-navy-conduct-first-mq-25-unmanned-tanker-test-flight/

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