UAS and SmallSat Weekly News

Contents

11Jul20

ParaZero secures 'commercially significant milestone' of 100 FAA waivers

APPLICATION NEWS UNITED STATES ALEX DOUGLAS JULY 10, 2020

The ability to secure authorizations for flight over populated areas and beyond-visual-line-of- sight from aviation regulators is a crucial commercial consideration for companies tapping into the commercial and civil drone market, valued by Goldman Sachs at $100bn.

100 organizations in the U.S. have now secured FAA operational waivers granting drone flight over populated areas using drones fitted with PRZ's SafeAir system parachute technology. These developments position PRZ as a market leader in the international drone industry, with regulatory support for its technology underpinning a global expansion.

This regulatory support recognizes the effectiveness of the PRZ SafeAir parachute system to protect bystanders on the ground, prevent loss of payload and safeguard the drone. https://www.commercialdroneprofessional.com/parazero-secures-commercially-significant-milestone-of-100-faa-waivers/

Aerovironment receives $21m contract option from US Army ALEX DOUGLAS JULY 10, 2020

The value of the initial contract option is $21,058,643 and includes avionics and data link upgrade packages to modify radio frequencies employed by the Army's existing fleet of Raven tactical UAS. Delivery would take place over a two-year period.

The Army exercised the option under the FCS domain awarded to AeroVironment by the army in June 2019. FCS is one of six domains comprising the Army's existing five-year Indefinite Delivery, Indefinite Quantity SUAS contract and has a potential value of up to $55m.

Rick Pedigo, vice president of business development and sales for AeroVironment, said: "AeroVironment is committed to providing continuous support to the Army's ongoing, multi-year programs of record for tactical UAS, such as the Raven, with field upgrades to help operators around the world perform their missions more effectively."

AeroVironment's Raven system is designed for rapid deployment and high mobility for operations requiring low-altitude intelligence, surveillance and reconnaissance. https://www.commercialdroneprofessional.com/aerovironment-received-21m-contract-option-from-us-army/

Skyports collaborates with Vodafone and Deloitte on NHS drone deliveries
APPLICATION DELIVERY HEADLINE NEWS UK ALEX DOUGLAS JULY 10, 2020

In the coming months, Skyports will start delivering pathology samples, medicine, essential personal protective equipment and COVID-19 testing kits between hospitals and to and from medical practices in Argyll and Bute on the west coast of Scotland.

Pick-ups that currently take up to 48 hours to be transported between healthcare sites will take only 30 minutes and with a much higher frequency. NHS staff will be able to make on-demand and scheduled requests via a web customer interface developed by Deloitte.

The drones will be remotely piloted from the Skyports Operations Centre in Argyll and Bute and will fly automatically along predefined routes. Communication between the drone and the ground control station will be provided using Vodafone's 4G network and satellite communications, as well as Earth observation data, to ensure connectivity coverage is provided at all times. By the end of the project, Skyports aims to integrate its operations into the local NHS supply chain, build its route network and create a drone delivery service that can be scaled for permanent operations. https://www.commercialdroneprofessional.com/skyports-collaborates-with-vodafone-and-deloitte-on-nhs-drone-deliveries/

Mavic Air 2 drone video captures Vermont Scott Simmie Jul. 10th 2020

A newly posted reel, taken in different locations around Vermont, shows off some of the great capabilities of DJI's Mavic Air 2 – and of the pilot. Come along, get comfortable, stay awhile – it's going to be worth it.

But this compilation reel, taking footage at different locations around Vermont, is stunning. Shots above cascading waterfalls, in mountains, and more give you a breathtaking look at the state. We could describe more, but there's an old saying in the storytelling world: Show, don't tell.

The pilot is Dave Cowley. On this post, he says: "I've flown over 15 hours with the Mavic Air 2 in all sorts of conditions this spring in Vermont. Staying close to home has given me the opportunity to explore amazing local spots!" https://dronedj.com/2020/07/10/mavic-air-2-drone-video-captures-vermont/

THE DRONERESPONDERS PUBLIC SAFETY UAS MISSION

PUBLIC SAFETY UAS RESEARCH AND INSIGHTS
STANDARDIZED TRAINING AND CERTIFICATIONS
SHARED KNOWLEDGE AND UAS EDUCATION
PROFESSIONAL, PROFICIENT UAS OPERATIONS

DRONERESPONDERS is a 501(c)3 non-profit Drones for Good™ program of AIRT, Inc. created to unite aerial first responders, emergency managers and search and rescue specialists under a unified organization to help learn, train, and test with the objective of maximizing drone operations for public safety. The program is led by Chief Charles Werner (ret.) who serves as the director.

Do you operate or manage unmanned aircraft systems for public safety, emergency management, critical infrastructure inspections, or disaster assistance missions? If so, then you should consider joining DRONERESPONDERS. There is no cost to join, and as a member, you will have access to research and information to help make your unmanned aviation operation more successful. Join https://www.droneresponders.org/?utm_source=DRONERESPONDERS&utm_campaign=351cf37f6e-DRONERESPONDERS_NEWS_UPDATE_20200711&utm_medium=email&utm_term=0_c4e369cb03-351cf37f6e-74300039

Drones Are Cool, But Robot Birds Are Better Popular Mechanics Courtney Linder 11Jul20

Festo, a German automation company, mostly known for whimsical fliers, has constructed a fleet of robotic birds, called BionicSwifts, that are nearly indistinguishable from their biological cousins. The robotic birds are ultralight and aerodynamic, yielding highly maneuverable and agile movements, from steep turns to loops.

Each robot weighs in at a meager 42 grams which is just about the weight of a golf ball. The fliers are 17.5 inches long with a 27-inch wingspan. Each segment of the wing is made up of

light, flexible foam. Each "feather" overlaps the next, like shingles on a roof, and is connected to a carbon quill. The full array is attached to the primary and secondary feathers so that they can seamlessly slide apart in unison, just like real bird feathers. During a wing upstroke, for instance, air can filter through the wing to propel it upward. The wing segments close during the following downstroke to create a more powerful downstream force.

Inside each unit, there is a housing for the wing flapping mechanism and the communication array. That includes a brushless motor, two servo motors, a battery, a gear unit and a number of circuit boards for radio, control and localization. Festo says in a post that "intelligent interaction" between the motors and mechanical system make it possible to adjust the frequency of wing flapping and the lifting angle to pull off certain maneuvers, from a barrel roll to a steep dive.

Radio-based indoor GPS helps to locate each unit for spatial awareness and can fly in a coordinated pattern. The setup involves a few radio modules mounted in a given space, and each bird has a radio marker that sends signals to the bases. The system can locate each bird's exact location, sending the data back to a master computer that works as the navigation system. In turn, the system can tell the birds to fly a preprogrammed path, and if they deviate away from it due to wind or some other ambient condition, the birds can autonomously correct their path. https://www.msn.com/en-us/news/science/drones-are-cool-but-robot-birds-are-better/ar-BB16BLMG

12Jul20

Celebrating Chula Vista's Close Proximity, Low Altitude BVLOS Waiver Jul 6 Fritz Reber, Skydio Head of Public Safety Integration, LinkedIn

Today, we are thrilled to celebrate the Chula Vista Police Department's new Close Proximity, Low Altitude waiver to enable Beyond Visual Line of Sight missions in emergency situations. This waiver is the result of months of collaboration on patrol drone operations, ground risk reduction and policy innovation between the CVPD, the San Diego UAS Integration Pilot Program and Skydio, and it will enable CVPD to fly entirely new categories of missions to keep their community safe. We are honored to have played a role in advancing the entire field of public safety drones with the help of Skydio's revolutionary autonomy capabilities.

The Skydio 2, which the CVPD was the first public safety agency to fly, provides 360° Obstacle Avoidance via 3D mapping, object and scene recognition and motion planning algorithms. In conjunction with limitations on altitude to avoid manned airspace, Skydio's Autonomy Engine technology makes it easier and safer than ever before to fly the close-to-the-ground or obstacles missions that are necessary to protect the public.

In the end, following a healthy and helpful dialogue with the FAA, CVPD received a first-of-a-kind COA that authorized "First Responder Tactical BVLOS" within the following parameters:

1. The operator must not operate any higher than 50 feet above or greater than 400 feet laterally of the nearest obstacle. Combination of 50 feet above an obstacle must not exceed 400 feet AGL
2. The aircraft must remain within 1,500 feet laterally from the pilot
3. There is NO requirement to use visual observers, but the pilot must return to visual line of sight operations as soon as practical.

The result is a groundbreaking COA that enables new and useful operations in evolving situations. https://medium.com/@Skydio/celebrating-chula-vistas-close-proximity-low-altitude-bvlos-waiver-d3f969c4b900

13Jul20

Intermap announces Zipline contract to deliver geospatial Elevation-as-a-Service
APPLICATION BUSINESS ALEX DOUGLAS JULY 13, 2020

The subscription contract has been urgently upsized following its successful proof of concept. This deal marks Intermap's return to the African market, and its expansion in the global unmanned aviation sector.

The firm says it further illustrates how on-demand, real-time geospatial elevation data and analytics, delivered as a service is mission-critical for the workflows that maximize flight safety and efficiency for unmanned logistics – in the air, on land and at sea.

Patrick Blott, Intermap's chairman and CEO, said: "Intermap is an established world leader in all-source elevation data and analytics, including its collection, processing, exploitation, and delivery. https://www.commercialdroneprofessional.com/intermap-announces-zipline-contract-to-deliver-geospatial-elevation-as-a-service/

Drone Delivery Canada gets set for commercial entry into US market APPLICATION
DELIVERY HEADLINE NEWS ALEX DOUGLAS JULY 13, 2020

The company is in discussions with potential US-based partners who have expressed positive interest in working with DDC to provide the Company's proprietary systems to support drone delivery solutions for multiple vertical markets and use-cases in multiple geographies.

It started the process to apply for an aircraft Type Design Approval for the Sparrow drone, with subsequent aircraft in DDC's fleet to follow. Aircraft Type Certification is an essential first step for FAA approval of routine beyond-visual-line-of-sight delivery operations. The company is currently permitted to conduct limited delivery operations in the US using visual line of sight regulations under 14 CFR Part 107 rules.

Reflecting on the move, Michael Zahra, president and CEO, said: "We have active discussions underway in numerous international target markets, and the United States is an obvious choice. We have flown successfully in the Unites States in a BVLOS pilot project, and now we are ready to start the process to enter the United States commercially."
https://www.commercialdroneprofessional.com/drone-delivery-canada-gets-set-for-commercial-entry-into-us-market/

FAA Partners with Swiss Authority to Advance, Harmonize Drone Integration Efforts Brian Garrett-Glaser July 10, 2020

The Federal Aviation Administration signed an agreement to work with the Swiss Federal Office of Civil Aviation on standards surrounding the safe use and integration of unmanned aircraft into civilian airspace, the agency announced during the 2020 FAA UAS Symposium remotely co-hosted with the Association for Unmanned Vehicle Systems International.

Under the declaration of intent, the two agencies intend to collaborate on projects related to UAS activities including unmanned traffic management concept validation, airworthiness, control and communications, detect and avoid, human factors, low altitude safety and training.

The agreement names FAA's UAS Integration Office and FOCA's Innovation and Digitalization Unit as the primary authorities for the agreement.

"UAS activities are now accepted worldwide as a vital sector of aviation," said Jay Merkle, executive director of the FAA's UAS Integration Office. "This U.S./Swiss agreement continues the move forward of the safe, efficient, and internationally harmonized integration of these vehicles into the world's airspace." https://www.aviationtoday.com/2020/07/10/faa-partners-swiss-authority-advance-harmonize-drone-integration-efforts/

U.S. DoD Invests in Drone Companies through CARES Act Miriam McNabb July 12, 2020

Five U.S. drone companies have been awarded over $13 million under the Coronavirus Aid, Relief, and Economic Security Act (CARES Act), money appropriated to save jobs and support the economy during the current COVID-19 crisis.

The awards were provided under Defense Innovation Unit's Commercial Solutions Opening. "DIU is leading the Department's UAS framework development intended to provide secure, trusted sUAS capability to the Department of Defense and other Federal Government stakeholders," says the DoD.

The announcement that DoD invests in drone companies is the latest indication that the U.S. government is moving to financially support U.S.-based alternatives to drones produced overseas, including those from leading drone manufacturer DJI.

"The DPA Title III funds across five companies saved 14 jobs, created 20 new positions, and will support continued advancement of capabilities providing the companies additional paths for recurring revenue," says the DoD announcement. The awards were made to U.S.-based companies AirMap, ModalAI, Skydio, Graffiti Enterprises, and Obsidian Sensors. The five companies represent a variety in the drone industry: unmanned traffic management (UTM), hardware, software, and sensors. https://dronelife.com/2020/07/12/u-s-dod-invests-in-drone-companies-through-cares-act/

Emesent launches autonomy for Beyond-Line-of-Sight underground drone flight

Brisbane, Australia, 13 July 2020 — Emesent, a drone autonomy company, today announced a major breakthrough in the journey to fully autonomous flight systems, with the launch of Autonomy Level 2 (AL2) for Hovermap, the world's first plug-and-play payload for industrial drones that provides autonomous beyond line of sight, GPS-denied flight.

AL2 enables compatible drones to fly beyond communications range and venture beyond line of sight into unmapped areas. The technology enables companies to rapidly map, navigate, and collect data in challenging inaccessible environments such as mines, civil construction works, telecommunications infrastructure, and disaster response environments.

Moving to AL2 means the drone can self-navigate and avoid obstacles beyond line of sight, while being operated from take-off to landing from a safe distance. The system processes data on-board in real time to stream a 3D map of the environment back to the operator's tablet, providing instant and detailed insights into the surrounding area, as well as any potential hazards. The entire mission from take-off to landing is conducted by interacting with the live view 3D map, allowing stopes to be mapped with just a few taps. https://mail.google.com/mail/u/0/#inbox/WhctKJVzXHXPjBwqBDCsGQgsBcRKgQZmlTDFkkNFZMZGXbTwwqvtxLCwxccVHDQThlzlDkv

Skydio raises $100 million, announces enterprise-focused drone lineup Kyle Wiggers@Kyle_L_Wiggers July 13, 2020

Redwood City-based drone startup Skydio today revealed it raised $100 million, bringing its total raised to $170 million. Coinciding with the fundraising, Skydio unveiled a new family of drones — X2 — and software solutions designed to simplify inspections and workflows.

X2 follows the October 2019 launch of the Skydio 2, and it pairs the company's autonomous navigation tech with a ruggedized airframe, folding arms, a thermal camera and 35 minute flight time. It is equipped with six 4K navigation cameras for obstacle avoidance and a sensor

payload that includes 12MP color and FLIR thermal cameras, and it will come with a new Enterprise Controller with a built-in, glove-compatible touchscreen and a wireless system to extend the range up to 3.8 miles.

Starting in Q4 2020, X2 will be available in two configurations – one tailored to military, defense, search and rescue, and security patrol missions and one designed for civilian situational awareness and inspection of infrastructure.

Skydio recently won a contract with the Drug Enforcement Agency, and the company has agency deals worth at least $7 million with the U.S. Air Force and Army. Law enforcement in Chula Vista, California, which last week won FAA approval to fly beyond an operator's line of sight, also uses Skydio drones. And the company donated 50 drones to public safety agencies during the pandemic through its Emergency Response Program. https://venturebeat.com/2020/07/13/skydio-raises-100-million-announces-enterprise-focused-drone-lineup/

14Jul20

Drone used to save hawks nesting in a tree about to be felled Josh Spires Jul. 13th 2020

A drone video shared by David Johnson shows a hawk nesting with two babies at the top of a dead Ponderosa pine tree in River Heights, Utah. Once Johnson was made aware of the nest in the tree that was about to be cut down, he sent his dronet up to see the hawk protecting its young.

He called the Utah Division of Natural Resources to see what he could do. The hawks are protected by the Migratory Bird Treaty Act that stops anyone from cutting down a tree while a bird species protected by it is in the tree.

The hawks (and tree) were left alone, and Johnson later added that he will check back in a few months with his drone to see if the hawks have left. He was also happy to have gotten some cool shots of the nesting hawk and its babies. https://dronedj.com/2020/07/13/drones-used-to-save-hawks-nesting-in-a-tree-about-to-be-felled/#more-31924

Public Safety Drone Programs: Key Questions & Answers from AIRT Public Safety UAS Survey Miriam McNabb July 13, 2020

In a narrowly focused and carefully crafted survey, almost 300 U.S.-based, law enforcement, fire and emergency services personnel answered some critical questions about how public safety drone programs in the AIRT and DRONERESPONDERS Spring 2020 Public Safety UAS Survey. In a media briefing this morning, Christopher Todd, Executive Director of the Airborne International Response Team (AIRT) and Chief Charles Werner (ret.), Director of DRONERESPONDERS, revealed what actual members of the public safety community at the local and state level are thinking about the drone programs in their department.

More than half of the public safety personnel responding said their drone programs are now more than a year old, but the use of drones is still limited – most departments (about 59%) are still only flying 1-5 missions per month.   Comparison with the fall survey, however, shows that the number is on the rise – and the variety of missions and applications is growing. More than 80% of responders use drones for training and exercises in their departments, and more than 50% use drones to acquire live stream data for incident command and control. Departments are also using drone technology for crime scene investigation, target search, forensic documentation – and interestingly, survey responses indicate cooperation between police and fire agencies when it comes to drone missions. See more survey results at: https://dronelife.com/2020/07/13/public-safety-drone-programs/

Fuel Cell Modules Power US Army Electric VTOL UAV 13 Jul 2020 Mike Ball

Intelligent Energy's 800W Fuel Cell Power Modules will be integrated by aerospace and defense technology firm Zepher into a custom-built electric Vertical Take Off and Land unmanned aerial vehicle being developed for the U.S. Army.

The UAV design will feature two 800W FCPMs, used together with an Intelligent Energy Power Path Module which connects the two modules for a 1.6kW total output. Zepher is aiming to provide the new UAV platform with 14 hours of flight endurance using Intelligent Energy's fuel cell solutions.

Zepher aims to have the UAV ready for Department of Defense applications within 12 months of the start of the contract. Intelligent Energy's FCPMs were selected because they can offer

significantly longer flight time, operate quietly and require minimal maintenance. Once the initial integration of the modules has been completed, Zepher will have a design solution ready for initial production.

According to Intelligent Energy, their Fuel Cell Power Modules are the lightest and most power-dense available on the market, providing benefits for a range of long-range and heavy-lift drone applications such as inspection, surveillance and delivery in both commercial and military markets. https://www.unmannedsystemstechnology.com/2020/07/fuel-cell-modules-power-us-army-electric-vtol-uav/?utm_source=UST+eBrief&utm_campaign=f1a15063bc-eBrief_2020_14Jul&utm_medium=email&utm_term=0_6fc3c01e8d-f1a15063bc-119747501

Matternet and UPS Expand Hospital Delivery Network Miriam McNabb July 14, 2020

Matternet and UPS have expanded their ground-breaking hospital delivery network, adding North Carolina's Wake Forest Baptist Health medical campus to their operations.

Matternet's M2 drone system is enabling the new hospital delivery network, in collaboration with UPS Flight Forward. "The service will use a hub-and-spoke routing model to provide rapid delivery of time-and-temperature-sensitive medicines and supplies, including PPE for medical professionals treating COVID-19 patients."

 "Matternet and UPSFF today started operating on two routes from one location at Wake Forest Baptist Health to two other health system locations, marking one of the first hub-and-spoke operating models for the U.S. drone delivery industry," says the release. "One route will transport scheduled deliveries of specialty infusion medicines. These medicines are patient-specific, high-cost and have a short shelf-life, making delivery by drone within minutes an ideal solution. The second route will transport on-demand supplies of personal protective equipment, such as surgical masks for medical professionals in their fight against COVID-19." https://dronelife.com/2020/07/14/matternet-and-ups-expand-hospital-delivery-network/

U.S. pushes homegrown drone industry amid China battle Ina Fried, author of Login

The moves come as the industry continues to be led by DJI, a Chinese hardware maker — and as concerns grow both in China and the U.S. about reliance on the other country's technology.
Driving the news: Skydio, a U.S. firm best known for its self-navigating

drones, announced $100 million in fresh funding, several executive hires and new products aimed at expanding its presence in the commercial market.

The U.S. government is giving $13 million to five U.S. companies that are part of the drone industry as part of the COVID-related CARES Act. Skydio received $4 million, with AirMap, ModalAI, Graffiti Enterprises and Obsidian Sensors also receiving funding.

The big picture: Today's global tech industry builds many of its biggest products through a complex interdependence between the U.S. and China, with the U.S. leading the market for core technologies like chips and operating systems and China leading in hardware manufacturing.

Skydio's first two drones were aimed primarily at consumers and designed to follow people around as they ran or tackled the ski slopes. The company's pivot to the enterprise market could mean major cost savings for businesses looking for an alternative to the primarily non-autonomous drones offered by DJI. Up to 80% of the costs in commercial drone programs are spent on training human pilots.

Yes, but: Other U.S. firms, such as GoPro, have tried unsuccessfully to compete with DJI head-on. "It's not enough to be made in the U.S.," Bry told Axios. But Skydio's focus on creating the software that allows drones to fly autonomously is a bet on where the industry is headed.
https://www.axios.com/drones-us-china-national-security-a9958137-5fb8-4cdf-8b14-c690b2cd3f09.html?utm_source=newsletter&utm_medium=email&utm_campaign=newsletter_axioschina&stream=china

Choctaw Nation of Oklahoma and Bell Announce Collaboration to Test the Bell Nexus July 14, 2020 News

The Choctaw Nation of Oklahoma (CNO) and Bell Textron established an agreement for Bell to begin testing mobility systems, like the Bell Autonomous Pod Transport and the Bell Nexus on the CNO test site location in rural southeastern Oklahoma.

CNO, Bell and their partners will work with the FAA, NASA, and other federal agencies to enhance emerging aviation technologies and operations to help the United States retain a global leadership position in aviation technology.

 "CNO became the obvious choice for flight test activity for Bell because of its proximity to Dallas-Fort Worth and their commitment to building facilities that support requirements necessary for these operations," stated Carey Cannon, chief engineer, Innovation. "In return, Bell is providing guidance to CNO on the creation of their Emerging Aviation Technology Test Center in regard to safety and efficient flight operations. We are excited to continue our collaboration with CNO around innovative solutions."
https://uasweekly.com/2020/07/14/choctaw-nation-of-oklahoma-and-bell-announce-collaboration-to-test-the-bell-nexus/?utm_source=rss&utm_medium=rss&utm_campaign=choctaw-nation-of-oklahoma-and-bell-announce-collaboration-to-test-the-bell-nexus&utm_term=2020-07-14

15Jul20

Are Passenger Drones Real? Oh Yes – EHang Thrills Tourists with Aerial Sightseeing Flights Miriam McNabb July 14, 2020

Autonomous aerial vehicles (AAV) are not a topic of future science fiction: they are in use today. EHang, the world's leading autonomous aerial vehicle technology platform company, is on a campaign to let the world know that passenger drones are real with their world flight tour. The tour aims "to demonstrate the reliability and versatility of its passenger-grade AAVs through safe autonomous flights in various commercial use cases including passenger transportation, aerial sightseeing, air logistics and medical emergency response," says an EHang press release. "EHang's passenger-grade AAVs have completed thousands of trial and demo flights in 21 cities and 6 countries, including China, the U.S., Austria, Netherlands, Qatar and UAE."

EHang first made headlines for their passenger drone at the Consumer Electronics Show in 2016. In four short years, that prototype has gone from a great idea to a working aircraft. Since then, EHang has formed partnerships with countries all over the world to introduce their passenger drones.
https://dronelife.com/2020/07/14/are-passenger-drones-real/

Skydio adds three new software solutions to portfolio MANUFACTURER NEW
PRODUCTS SKYDIO SOFTWARE TECHNOLOGY SAM LEWIS JULY 15, 2020

These are the Skydio Autonomy Enterprise Foundation, Skydio 3D Scan and Skydio House Scan, and were announced in addition to the X2 family of drones and a £80million funding round.
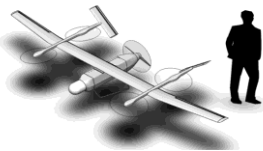
The Skydio Autonomy Enterprise Foundation adds to Skydio's Core Autonomy system with new pilot-assist capabilities that make flights safer and more efficient. Features include '360 superzoom' capabilities, as well as a higher precision of user control and a vertical view option.

Next, the Skydio 3D Scan allows autonomous inspection of industrial structures with a 3D reconstruction function.

Finally, Skydio House Scan was developed in partnership with Eagleview. Skydio said the system enables home insurance agents to automatically perform accurate inspections of residential homes safely and without the need to become expert drone pilots. https://www.commercialdroneprofessional.com/skydio-adds-three-new-software-solutions-to-portfolio/

Zepher Announces $4M Contract Award with Army Research Laboratory July 14, Military News2020

Carbon Consultants LLC, dba Zepher, has been awarded a sole source HUBZone contract by the Army Research Laboratory to directly support a USASOC effort.

The focus will be on researching technologies to improve the endurance and acoustic signature of UAS in austere environments. Zepher's work will focus on the initial development of a Group 2 UAS, categorized as a system less than or equal to 55-pound gross takeoff weight, during a 12-month timeline. The Army Research Laboratory can also exercise an additional 12- month option for the development of a 110-pound gross takeoff weight Group 3 UAS. If the option is exercised, the total contract award amount will be nearly $4M.

Zepher's HUBZone status, combined with an established track record of manufacturing and developing products for highly-regulated industries, met the sole source requirements sought for the project. https://uasweekly.com/2020/07/14/zepher-announces-4m-contract-award-with-army-

research-laboratory/?utm_source=rss&utm_medium=rss&utm_campaign=zepher-announces-4m-contract-award-with-army-research-laboratory&utm_term=2020-07-15

These drones won't fly into one other, thanks to machine learning Josh Spires Jul. 15th 2020

Engineers at Caltech have successfully designed a new method to control the movement of drones within a swarm to stop them from flying into one another. The new method relies on data to control the movement of the drones through cluttered unmapped spaces.

The team, led by Soon-Jo Chung and Yisong Yue with the help from Caltech graduates Benjamin Rivière, Wolfgang Hönig, and Guanya Shi, needed to take on two major challenges that arise when multiple drones are flying together.

The first is having the drones fly into a new environment for the first time and needing to make split second decisions to ensure they don't hit each other and obstacles surrounding them. The second is having multiple drones; the more drones flying, the less space available for each of them to maneuver around obstacles and one another.

The team was able to develop GLAS, aka Global-to-Local Safe Autonomy Synthesis, which means the drones don't need to have a picture of their surroundings before they commence flight. Rather, these drones generate their trajectory on the fly. The GLAS algorithm is used alongside Neural-Swarm, which learns the complex aerodynamic interactions in close-proximity flight.

The team tested GLAS and the Neural-Swarm with 16 drones by flying them in an open arena at Caltech's Center for Autonomous Systems and Technologies. The tests found that GLAS was able to outperform current algorithms by 20%, while the Neural-Swarm outperformed current controllers. Tracking errors were reduced by up to a factor of four.
https://dronedj.com/2020/07/15/these-drones-wont-fly-into-one-other-thanks-to-machine-learning/

Drone light show illuminates the sky at the Shanghai AI conference Josh Spires Jul. 15th 2020

A drone light show has lit up the night sky above Shanghai in celebration of the 2020 World Artificial Intelligence conference earlier this month. The drone show took to the skies near the Mercedes-Benz Arena and was accompanied by a ground-based light show.

This year's World Artificial Intelligence conference was a little different due to the COVID-19 outbreak shutting down public areas and international flights, causing it to be an online-only event like the majority of all shows this year.

The event showed off the latest in AI technology and research from areas such as 5G, medical, education, transportation, and business. The conference brought some of the best minds in AI together from around the world to share ideas and network.

The video starts with four layers of drones combining to form a rectangular prism, which then transforms into a disappearing rainbow. The drones then create the conference's logo that transforms into Chinese characters. The drones then create a flat map of the world that slowly turns into a rotating globe of the world. You might as well see for yourself. But check out that QR code at the end – very clever! https://dronedj.com/2020/07/15/drone-light-show-lights-the-sky-at-the-shanghai-ai-conference/

16Jul20

LAANC Use Accelerates: Kittyhawk Reports All-Time Record Levels of Activity Miriam McNabb July 15, 2020

Despite the current COVID crisis, there has been a lot of good news from the drone industry lately – and one is that LAANC use is accelerating. This piece of positive data comes from drone operations platform Kittyhawk, developers of the FAA's first mobile app, B4UFly. In a blog post, Kittyhawk CEO and Co-founder Jon Hegranes says that activity has hit record levels: indicating that more pilots are concerned with safe and legal flight. "Without question, recreational and commercial drone operators are more educated and situationally aware of their airspace than ever before, and they are taking advantage of capabilities like LAANC to fly safely and compliantly."

LAANC stands for Low Altitude Authorization and Notification Capability. It's a great example of the FAA working with the drone industry to develop a product that works for most stakeholders: LAANC took a time-consuming paper process and developed an alternative that allowed drone operators to get near real-time authorizations to fly in low altitude airspace. B4UFly also helps make it clear to all operators where they can and cannot fly. https://dronelife.com/2020/07/15/laanc-use/

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

UK signs £65m contract for first three Protectors Craig Hoyle15 July 2020

The UK Ministry of Defence (MoD) has ordered its first three of a planned 16 Protector RG1 unmanned air vehicles from General Atomics Aeronautical Systems, with the £65 million ($82 million) contract announced on 15 July. With its first production order now in place, the MoD says operations with the Protector fleet will start by mid-2024. The type will replace the Royal Air Force's current General Atomics Reapers.

To be home based at RAF Waddington in Lincolnshire, the Protector fleet will be capable of conducting intelligence, surveillance and reconnaissance tasks, including in adverse weather conditions. It will also be certificated to operate in non-segregated airspace, by using on-board sense and avoid technology.

Flight endurance is cited at up to 40h, with the aircraft to carry MBDA Brimstone air-to-surface missiles and Raytheon UK Paveway IV precision-guided bombs.
https://www.flightglobal.com/military-uavs/uk-signs-65m-contract-for-first-three-protectors/139302.article

UAVOS joins HAPS Alliance to evolve high-altitude UAV tech market APPLICATION BUSINESSy ALEX DOUGLAS JULY 16, 2020

UAVOS is joining the High Altitude Platform Station (HAPS) industry Alliance to promote the use of high-altitude solar-powered autonomous aircraft. It wants to facilitate global research missions, communication, connectivity, intelligence, surveillance and reconnaissance from the stratosphere.

UAVOS has joined the HAPS Alliance to collaborate with member companies towards accelerating the development and adoption of HAPS technology into the evolution of the high altitude unmanned platforms market. UAVOS's HAPS knowledge is based on test flights for more than 1000 hours of HAPS flight tests at altitudes of up to 6600 ft (20,000 m).

The ApusDuo project is the second generation of UAVOS"s HAPS solar airplane.
https://www.commercialdroneprofessional.com/uavos-joins-haps-alliance-to-evolve-high-altitude-uav-tech-market/

AiRXOS Launches New Unmanned Aircraft Systems Solution for Energy Industry
July 15, 2020 News

AiRXOS, a provider of Unmanned Traffic Management solutions, today announced a comprehensive Unmanned Aircraft Systems solution for Energy organizations to plan, schedule, operate and monitor all facets of their UAS operations from a single platform.

AiRXOS' new Enterprise Energy Solution provides compliance, Situational Awareness of airspace and assets, inspection, emergency response/disaster recovery capabilities, analytics and asset performance tools all in one, connected platform. The system runs on AiRXOS' Air Mobility™ Platform – a secure, cloud-based, platform that enables integration of an energy organization's current applications and other UAS Service Suppliers, as well as supports the full lifecycle of energy operations.

The Enterprise Solution allows energy organizations to integrate all inspection needs in one connected system with automated technology with capabilities including Automated Waiver, Exemption and Certificate of Authorization for safer, faster flying, partner-enabled mission-ready kits with sensors, drones, and pilots as a service, emergency response and disaster recovery application with mass alerts, digital SGI and complete situational awareness, compliance and crew management for reliability and transparency, asset management and security to optimize assets, analytics and insights for near real time actionable intelligence and program design services to help energy companies launch and grow programs. https://uasweekly.com/2020/07/15/airxos-launches-new-unmanned-aircraft-systems-solution-for-energy-industry/?utm_source=rss&utm_medium=rss&utm_campaign=airxos-launches-new-unmanned-aircraft-systems-solution-for-energy-industry&utm_term=2020-07-16

BVLOS Powerline Inspection Over A City Using VTOL UAVs July 15, 2020 News

Skyqraft, a data-driven infrastructure inspection company from Sweden, was granted BVLOS operation permission for the Vertical Technologies DeltaQuad VTOL UAV, to inspect a large portion of the Swedish power grid.

Flying fully autonomous from takeoff to landing, using long-range radio transmission combined with video and control links, Skyqraft was able to perform multiple BVLOS missions gathering high-resolution images for over 1000KM of powerlines. The resulting data is used for early indicators of failures to the powerlines, isolators, and towers.

The missions are planned to follow the powerlines at a safe altitude using automatic terrain following. The onboard camera is automatically triggered to record high-resolution photographs of the selected path while the operator receives live video and keeps a control link over long distances. Using ADS-B transponder receivers the pilot is made aware of any aviation up to 100km away.

The success of visual line-of-sight trials, combined with failsafe features and a redundant flight system, led the Swedish authorities to issue Skyqraft an additional waiver to fly extended-range missions and to cross populated areas. With the waiver secured, and after several BVLOS missions over scarcely populated areas, the DeltaQuad performed two missions crossing the city of Gävle autonomously covering 90KM of powerlines. A significant step forward- as this was the first official autonomous BVLOS flight of a fixed-wing UAV over a Swedish city.

To date, Skyqraft has logged over 30 flight-hours BVLOS and inspected more than a thousand kilometers of powerlines. https://uasweekly.com/2020/07/15/bvlos-powerline-inspection-over-a-city-using-vtol-uavs/?utm_source=rss&utm_medium=rss&utm_campaign=bvlos-powerline-inspection-over-a-city-using-vtol-uavs&utm_term=2020-07-16

UAVOS Joined HAPS Alliance to Evolve the High-Altitude Unmanned Platforms Market July 15, 2020 News

UAVOS is proud to announce joining the High Altitude Platform Station (HAPS) industry Alliance with some of the world's leading companies to promote the use of high-altitude solar-powered autonomous aircraft for facilitating global research missions, communication, connectivity, intelligence, surveillance and reconnaissance from the stratosphere.

UAVOS's HAPS knowledge is based on test flights for more than 1000 hours of flight tests at altitudes of up to 6,600 ft (20,000 m). HAPS platforms are autonomous, high-altitude, ultra-long endurance aircraft powered by solar energy which are designed to boost internet connectivity worldwide to provide continuous monitoring of the Earth's surface. High altitude unmanned platforms allow near-ubiquitous coverage, which avoids ground clutter and significant latency issues. https://uasweekly.com/2020/07/15/uavos-joined-haps-alliance-to-evolve-the-high-altitude-unmanned-platforms-technology-market/?utm_source=rss&utm_medium=rss&utm_campaign=uavos-joined-haps-alliance-to-evolve-the-high-altitude-unmanned-platforms-technology-market&utm_term=2020-07-16

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HoverGames Promotes Drone Solutions to COVID Problems Jason Reagan July 16, 2020

NXP Semiconductors is charging up the drone world this year, launching the second-annual HoverGames Challenge 2: Help Drones Help Others.

The interactive coding competition encourages developers to create drone solutions for frontline support during pandemics such as COVID-19. HoverGames Challenge participants will use NXP's automotive, industrial and IOT technologies for system control, networking, security and motor control in an effort to "make a difference in pandemic response."

An NXP spokesperson notes: "The collateral effects of pandemics leave citizens with difficult challenges to overcome. A lack of mobility, social isolation and lack of access to goods and services can be physically and psychologically devastating. HoverGames Challenge 2 will inspire participants to develop pioneering ways to use drones to help healthcare and frontline workers overcome these barriers." https://dronelife.com/2020/07/16/hovergames-promotes-drone-solutions-to-covid-problems/