UAS and SmallSat Weekly News

Contents

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23May20

Mapping Drones: The Remo-M is an Award Winning, Sophisticated Solution

Miriam McNabb May 21, 2020

As a recent winner of the African Drone Forum's Lake Kivu Challenge, the Remo-M is making a big impact on the global stage.

It is manufactured by Uconsystem, a pioneering South Korean UAV manufacturer founded in 2001. The first Remo fixed wing was developed in 2009. In 2015, Uconsystems and Remo-M entered into a design, distribution and services relationship with global geospatial data experts Hojung Solutions. In the U.S., the Remo-M is represented by Denver-based Geotech Environmental.

The Remo-M won the Challenge by successfully and accurately identifying not only specified positions on a remote island but also on moving boats in the water.

"The Remo-M has a steep climb in the takeoff and deep-stall landing feature which gives the ability to take-off and land in small spaces," explains Cho. Its unique landing method also means that the drone functions without infrastructure in any environment.

Hojung's drone-based GIS survey solution was recognized at the World Bank's Land and Poverty Conference in 2019, and the company is committed to working on global projects in any part of the world. In mountains, valleys, deserts or jungles, the Remo-M is ready to fly.
https://dronelife.com/2020/05/21/remo-m-mapping-drone/

The FAA's UAS Symposium is Going Remote Miriam McNabbon: May 21, 2020

Since its inception, the FAA's UAS Symposium, co-sponsored with AUVSI, has been a significant drone industry event. This year, even more people may be able to attend: the Symposium is going remote.

The event is a chance to meet and understand the FAA in discussions on many of the critical issues facing the drone industry. "The FAA UAS Symposium – Remotely Piloted Edition provides stakeholders with the opportunity to talk face-to-face via a virtual platform with a cross-section

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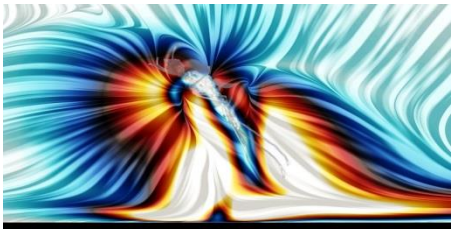
of government and industry representatives about regulations, research and initiatives to integrate unmanned aircraft systems into the National Airspace System ," says the FAA.

This year, the event will be held as two separate "episodes." The first, held July 8-9, will focus on unmanned traffic management and unmanned integration. The second episode will be held August 18-19, and will focus on updates to the UAS Integration Pilot Program and public safety operations.

The 2020 Program offers four tracks: Public Safety, Technology and Innovation, International, and Policy. Among the themes of the program is "Getting More Out of Your Drone Business." With education, networking, and a unique opportunity to communicate directly with FAA stakeholders, the FAA UAS Symposium – Remotely Piloted Edition – is not to be missed. Registration and more information can be found here. https://dronelife.com/2020/05/21/the-faas-uas-symposium-is-going-remote/

Mosquitoes Inspires a Surface Detector PRESS 2020-05-22



Scientists have used the principles that guide a mosquito's nocturnal flight to develop a quadcopter equipped with an elegant collision-avoidance sensory system. Their research, published in *Scienc*e, demonstrates how the mosquito avoids obstacles in the dark by sensing changes in the airflows generated by its flapping wings.

The international collaborative research group, which includesDr Simon Walker from the University of Leeds and was led by Professor Richard Bomphrey at the Royal Veterinary College, used the understanding of the sensory mechanism in the male *Culex quinquefasciatus* mosquito to develop a bio-inspired collision avoidance system for an autonomous quadcopter – which encodes aerodynamic information on the fly.

Nocturnal mosquitoes navigate in the dark without crashing into surfaces. When they land on humans or other animals to feed, they do it very gently in order to remain stealthy; being noticed could spell disaster. Since these nocturnal mosquitoes cannot see what they are doing with their eyes, they use a different sensory mode – mechanosensing.

Mosquitoes, and other flying animals, fly by accelerating the air around them, creating fast jets beneath each flapping wing. These jets change shape in the presence of obstacles such as the ground or walls.

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Thanks to an exquisitely sensitive array of receptors at the base of the antennae on mosquitoes' heads, called the Johnston's organ, the mosquito is capable of detecting these changes in airflow patterns. The researchers called this "aerodynamic imaging": it gives the mosquito a picture of the world around them even in the dark and when they cannot feel surfaces by physical contact. The team used computational fluid dynamics simulations based on high-speed recordings of mosquito flight to investigate the effects of the ground and walls on airflows around the body. http://www.uavexpertnews.com/2020/05/mosquitoes-inspires-a-surface-detector/?utm_source=Master&utm_campaign=46d3e2a7af-EMAIL_CAMPAIGN_2017_12_20_COPY_01&utm_medium=email&utm_term=0_35ad7bc94d-46d3e2a7af-89168288

University lab develops disinfecting drone with UV-C lights Sean Captain May. 22nd 2020

Researchers at the University of California San Diego have a suggestion: build disinfecting drones with germ-killing UV-C lights.

By forgoing liquid, they can use a much smaller drone. The company has been experimenting with the Parrot Beebop. They have retrofitted it with strips of LEDs that emit ultraviolet light in the UV-C frequency range.

This is not the kind of UV light you get at the beach, which is UV-A and UV-B. UV-C has a shorter wavelength and higher energy, making it more deadly to pathogens, but also more harmful to people. The idea is that the drone can be placed in a room and then piloted remotely, using the drone's camera to navigate.

The UCSD effort has a maker aspect to it. The goal is to design a kit that anyone can then adapt to retrofit their own drones. "Ideally we would like to be able to do this with any drone that people have at their disposal," says Professor Tara Javidi.

This gets the disinfection capability into a lot more hands. The team is currently testing their prototype to see how effective it is at killing pathogens. Javidi says she is aiming for more than 99% effectiveness. https://dronedj.com/2020/05/22/university-lab-develops-disinfecting-drone-with-uv-c-lights/#more-29208

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Flirtey scores patent for package-lowering delivery drone Sean Captain May. 22nd 2020

Flirtey announced that it's received a patent for the technology to hoist up and lower down packages while the drone hovers overhead. The Flirtey patent covers the hardware as well as the software that makes it possible. While Flirtey may have been first to use such a system, others have followed. Google sibling company Wing also lowers packages on a tether. So does Irish drone delivery firm Manna Aero, which is beginning a trial program delivering medical supplies in a small Irish town.

Of late, the company has been doing a trail food-delivery service in the largest industrial park in the United States. The Tahoe-Reno Industrial Center in Nevada covers 107,000 acres and more than 100 companies, including the Tesla Gigafactory.

Flirty's rivals have not been idle, especially Wing. The company is running a home delivery service in Christiansburg, Virginia, as well as Australia. It reports doing over a thousand deliveries in Virginia in two weeks, where it delivers both for big players like Walgreens and for a local coffee shop. https://dronedj.com/2020/05/22/flirtey-scores-patent-for-package-lowering-delivery-drone/#more-29137

AeroVironment Unveils Quantix Recon, Unmanned Aircraft System for Defense Applications May 21, 2020 Military News

AeroVironment, Inc. today announced the availability of Quantix™ Recon, a lightweight, rapidly deployable, fully-automated reconnaissance solution that delivers high resolution, georeferenced terrain, vegetation and infrastructure imagery.

With its hybrid VTOL design, it combines the vertical takeoff and landing advantages of a multirotor drone with the range, speed and efficiency of a fixed-wing unmanned aircraft. Featuring fully-automated flight operation, it surveys up to 0.6 square miles or 12.4 linear miles per 45-minute single-battery flight. Users may choose between line (route), area and waypoint data capture. Imagery data is compatible with a range of geographic information system analytical tools.

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It is fully-automated and hands-free with five optional flight altitudes, ranging from 150 to 800 feet. It is equipped with dual 18-megapixel cameras that can capture both high resolution true color and multispectral georeferenced imagery. On-board processing allows users to immediately view the imagery on the operating tablet as soon as the aircraft lands. Users can pinch and zoom navigation down to centimeter-level ground sampling distance.
https://uasweekly.com/2020/05/21/aerovironment-unveils-quantix-recon-unmanned-aircraft-system-for-defense-applications/?utm_source=rss&utm_medium=rss&utm_campaign=aerovironment-unveils-quantix-recon-unmanned-aircraft-system-for-defense-applications&utm_term=2020-05-22

Commercial UAV Expo goes "virtual" with hybrid show for 2020 APPLICATION EUROPE EVENTS HEADLINE NEWS ALEX DOUGLAS MAY 20, 2020

Lisa Murray, group director at Diversified Communications, explained: "Due to ongoing concerns caused by the COVID-19 pandemic, and for the health and safety of the members of the commercial drone community, we have made the decision to reimagine Commercial UAV Expo Europe as a fully virtual event this year. It will take place as part of a hybrid live-virtual Amsterdam Drone Week 1-3 December, 2020."

The content will include keynotes, panel discussions, and presentations with interactive Q&A and chat features; an AI-powered networking component; and virtual exhibits, presentations and demonstrations by UAS solutions providers.

"While it will naturally be a different experience, we are committed to providing commercial drone professionals the same benefits they've come to expect: critical, timely education delivered by industry leaders, opportunities to network and engage with peers and the ability to learn about the newest technology." The content of this year's show will address how the industry has responded to the pandemic, as well as associated opportunities and challenges.
https://www.commercialdroneprofessional.com/breaking-news-commercial-uav-expo-goes-virtual-with-hybrid-show-for-2020/?utm_source=Email+Campaign&utm_medium=email&utm_campaign=45819-329986-Commercial+Drone+Professional+DNA+-+2020-05-23

24May20

The Drones Were Ready for This Moment Alex Williams May 23, 2020

New Yorkers strolling along the East River early last month glanced up to see an unsettling sight: a mysterious drone claiming to represent something called the "Anti-Covid-19 Volunteer Drone Task Force" barking orders to pedestrians below to maintain social distancing. It wasn't a police drone. Was it a vigilante drone or an aerial white knight? Was it friend or foe?

The origins of the "Anti-Covid-19 Volunteer Drone Task Force," which turned out to be the work of a Queens drone enthusiast, may have confused New Yorkers initially, but in most cities, there is no question who is running the current aerial patrol. Law enforcement officials in cities and towns around the world have been using drones to scan parks, beaches and city squares for violators wandering into the safe spaces of others.
https://www.nytimes.com/2020/05/23/style/drones-coronavirus.html?referringSource=articleShare

Fotokite launches roof-mounted first-responder drone Sean Captain May. 20th 2020

Fotokite, a Swiss startup that specializes in first responder drones, has just launched a new product to make deployment even quicker. Its drone takes off right from the roof of an emergency vehicle. Rooftop, as the product is called, is a box that mounts on the roof of a vehicle. When first responders arrive on the scene, the box opens up, revealing the company's Sigma hexacopter.

Rooftop doesn't just house the done. It also provides continuous power and data link through a 150-foot tether.

The tether eliminates the limitation of drone batteries, which typically deplete in about 30 minutes. Sigma can stay aloft for hours, streaming data from both an RGB and an infrared camera. Of course this limits how far the drone can fly. Fotokite is more about getting a perspective from on-high than flying a drone all around an emergency scene.

Another novel aspect of Sigma is that it's completely autonomous. The drone takes off, hovers, and lands automatically at the push of a button.

With the roof mount and autonomous launch, Fotokite claims that its drone can be in the air and sending back images within 10 seconds of arrival on the scene. And in an emergency, every second counts. https://dronedj.com/2020/05/20/fotokite-launches-roof-mounted-first-responder-drone/

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25May20

DroneShield launches DroneOptID camera-based drone tracking software May 25, 2020 Jenny Beechener Counter-UAS systems and policies

The DroneOptID software has an Artificial Intelligence/Machine Learning engine and uses computer vision technology to detect, verify and track drones in real time. The software can work with a wide range of cameras. In addition to compatibility with DroneShield's DroneShieldComplete native GUI, DroneOptID can be used in third party Command and Control (C2) systems.

DroneShield's CEO Oleg Vornik commented, "Multi-layered systems are at the core of DroneShield's approach to effective detection and mitigation of drones. DroneOptID enables the next step in this equation, with a way to obtain visual data on the drone that can be used for a range of purposes, from court evidence to directing a kinetic weapon, and enables additional information to the system user, such as reviewing payload of the drone, which isn't available through other sensors". The product summary is available here: www.droneshield.com/droneoptID https://www.unmannedairspace.info/counter-uas-systems-and-policies/droneshield-launches-droneoptid-camera-based-drone-tracking-software/

Amsterdam Drone week goes virtual, adds new events May 25, 2020 Philip Butterworth-Hayes UAS traffic management news

Amsterdam Drone Week will expand its activities in 2020 by organising two hybrid summits on 17 September and 1-3 December 2020.

"Amsterdam Drone Week, is an initiative of EASA and RAI Amsterdam and is organized in close collaboration with our founding partners Boeing, Airbus, KPN and City of Amsterdam and supported by CANSO, Commercial UAV Expo, DGMOVE and the Dutch Ministry of Infrastructure and Water Management. Virtual expert sessions and matchmaking will be facilitated to create additional networking moments and share knowledge through the entire UAM ecosystem.

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Nynke Lipsius, Event Director, explains: "In September and December we will organize two hybrid summits. The hybrid summits consist of an online livestream with keynotes, panel discussions and interviews to reach out on a global scale and can also be visited live onsite. As connecting through the UAM ecosystem is key to move forward, all delegates, partners and speakers can use ADW matchmaking to plan virtual or live meetings during the hybrid summits.

"The EASA High Level Conference on Drones will unfortunately not take place in its traditional format in 2020, due to the impact of the coronavirus. The next conference is currently expected to take place during Amsterdam Drone Week 2021, scheduled for 7 December – 9 December 2021. "At this time all our resources and expertise are directed to the Covid-19 challenges we're facing in the aviation industry." says Patrick Ky, EASA Executive Director.
https://www.unmannedairspace.info/latest-news-and-information/amsterdam-drone-week-goes-virtual-adds-new-events/

Wingcopter Lands Award for Humanitarian Drone Delivery Jason Reagan May 22, 2020

UAV startup Wingcopter is flying high this week after being named one of nine winners of Germany's top global hackathon to kick-start humanitarian drone delivery.

The autonomous delivery drone manufacturer partnered with UNICEF and the African Drone and Data Academy to develop a concept to deploy humanitarian drone delivery services. The goal will be to improve health supply chains during the COVID-19 pandemic and beyond. The group will receive up to $3.6 million to make the plan a reality.

The brainchild of the German Ministry for Economic Cooperation and Development, #SmartDevelopmentHack solicited "innovative digital solutions to tackle the challenges caused by the coronavirus outbreak in low-and-middle-income countries."

The concept would see the development of a locally operated humanitarian drone delivery network in Malawi. Tasked with supporting community healthcare systems, the delivery drones would provide on-demand access to medical supplies such as coronavirus test kits and future vaccines. In addition, the program will launch two training programs to teach 160 Malawi children how to build, operate and maintain drones, as well as data-analytics training.
https://dronelife.com/2020/05/22/germany-humanitarian-drone-delivery/

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26May20

The Air Force's AI-Powered 'Skyborg' Drones Could Fly as Early as 2023. KYLE MIZOKAMI MAY 22, 2020

The U.S. Air Force is finally pushing into the world of robot combat drones, vowing to fly the first of its "Skyborg" drones by 2023. The service envisions Skyborg as a merging of artificial intelligence with jet-powered drones. The result will be drones capable of flying alongside fighter jets, carrying out dangerous missions. They will be much cheaper than piloted aircraft, allowing the Air Force to grow its fleet at a lower cost.

The Air Force, according to Defense News, will award a total of $400 million to one or more companies to develop different types of Skyborg drones. The drones will be "attritable", meaning they will be designed to fly multiple flights, but the Air Force won't sweat it if it loses one. The drones are expected to fly in 2023.
https://www.popularmechanics.com/military/aviation/a32631612/skyborg-drones-2023/

Wing's drone delivery services are booming worldwide Sean Captain May. 25th 2020

Wing, owned by Google parent company Alphabet, is doing a brisk drone delivery business around the world. The company operates in Australia, Finland, and Virginia in the US and has seen its deliveries double month after month globally.

Part of that growth is from an influx of customers. Wing is seeing a roughly 350% increase month on month in customer sign-ups around the world. New customers may be driven in part by the reality of social distancing and lockdowns. Delivery services of all sorts are booming in the coronavirus world, as housebound consumers seek to limit going out or interacting with other people. A drone seems especially socially distanced, since you never even see another human. (Of course, someone did have to pack the drone.) Wing's drones simply hover over a customer's front or back yard and lower the package to the ground on a line. Drone deliveries are also really fast: Wing's fastest delivery time to date has been 2 minutes and 47 seconds.
https://dronedj.com/2020/05/25/wings-drone-delivery-services-are-booming-worldwide/

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Drones help monitor dangerous volcano Sean Captain May. 25th 2020

Volcanos are most interesting when they are most active. But that's also when they are most dangerous. Now volcanologists are using drones to get close-up views of volcanos without putting themselves at risk.

Researchers from the German Research Centre for Geosciences, known by the German abbreviation GFZ, recently revealed amazingly detailed data from an active volcano using drones with visual and thermal-imaging cameras. Their study of the Santa Maria volcano in Guatemala appears in the journal Scientific Reports.

Although they were not flying a stereo camera, the researchers made use of special algorithms to covert the images they collected into a 3D model of the volcano. The thermal imaging camera collected data to create a temperature model of the structure. The models are accurate down to a few centimeters. The data helped researchers determine the flow velocity, movement patterns, and surface temperature of the volcano. Those factors are key for predicting the danger of explosive volcanoes. "We have shown that the use of drones can help to completely re-measure even the most dangerous and active volcanoes on Earth from a safe distance." https://dronedj.com/2020/05/25/drones-help-monitor-dangerous-volcano/

Drone deliveries start at Rotterdam port Sean Captain May. 25th 2020

On Friday, the Port of Rotterdam launched a drone delivery trial program. The first flight saw a DJI Matrice 210 bring a parts consignment to Allseas Pioneering Spirit, the biggest vessel in the world. The trial program is jointly run by Allseas, the Port of Rotterdam and the Dutch Drone Delta and is expected to run for several years. Initially, all flights have to be within line of sight of the operator, which limits how far a delivery can go. But the plan is to eventually transition to beyond visual line of sight, allowing the drones to serve a much large area.

The current method relies on small boats or helicopters to go out to the ship. But if the items required weigh just a few pounds, a drone could be a faster and more efficient way to get the supplies to the ship. This Rotterdam trail comes just a few weeks after the port of Singapore launched its own drone delivery program. https://dronedj.com/2020/05/25/drone-deliveries-start-at-rotterdam-port/

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Small UAS for long-distance missions: ISTAR, SAR and emergency response

The Raybird 3 is a small, fixed-wing UAV designed for long-range, reconnaissance and patrolling missions. The drone can operate for more than 24 hours, carry a payload of up to 5kg, and transmit video across 100+ km, making it the ideal choice for large-area operations in varying conditions, such as: ISTAR (intelligence, surveillance, target acquisition, and reconnaissance) search and rescue, and other missions requiring real-time situational awareness.

The man-portable one-box solution can be unpacked and deployed in as little as 15 minutes, with fully autonomous operation including takeoff, landing and payload control. The four-stroke gasoline engine-powered platform can be easily programmed with preset flight routes and an automatic return-to-launch point. With a modular payload system and a lift capacity of up to 5kg, the Raybird 3 can be equipped with a variety of sensors including gyro-stabilised gimbals, aerial cameras, synthetic aperture radar, radio relays and electronic warfare equipment.

It can be launched by catapult and recovered by parachute and airbag. Sensitive gimbals and payloads are protected by a retraction mechanism. An encrypted digital data link provides security against electronic attacks.
https://www.unmannedsystemstechnology.com/company/skyeton/?utm_source=UST+eBrief&utm_campaign=d8dd65cf75-eBrief_2020_26May&utm_medium=email&utm_term=0_6fc3c01e8d-d8dd65cf75-119747501

Automated Commercial Drone Operations Approved Over Singapore 24 May 2020

Mike Ball

Airobotics has received approval to operate unmanned aerial systems over Singapore, in conjunction with the Home Team Science & Technology Agency, a statutory board of the Ministry of Home Affairs in Singapore, as well as Airobotics' local partner SJ Defence. The approval, which Airobotics claims is the first in the world to be granted for drone operation over a major metropolis, is part of Singapore's response to protect the public's health during the coronavirus crisis.

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HTX is using Airobotics' drone technology to support Singapore Police Force's efforts in policing by tracking anomalies such as congregations of people. The technology uses real-time aerial data broadcast to accelerate the feedback process and provide the SPF with situational awareness for better decision-making. To support the drone operations, Airobotics partner SJ Defence is providing logistics management, operations coordination and ground safety observers. https://www.unmannedsystemstechnology.com/2020/05/automated-commercial-drone-operations-approved-over-singapore/?utm_source=UST+eBrief&utm_campaign=d8dd65cf75-eBrief_2020_26May&utm_medium=email&utm_term=0_6fc3c01e8d-d8dd65cf75-119747501

27May20

Drone deliveries are making their case in a crisis Nick Summers, @nisummers May 26, 2020

It feels like drones were built for this moment. Many commercial UAV operators are flourishing. In a time of crisis, they're keen to step forward and showcase the impact that drone deliveries can have on society.

Take Matternet. Last month, logistics powerhouse UPS announced that its Flight Forward subsidiary would support a retirement community in Florida by ferrying medicine from a nearby CVS pharmacy.

It's a short route, and, for the initial flights at least, it requires a human concierge to take the delivery to the customer's door. He also wants to reach a point where the drones can hover and lower the package at the resident's doorstep. "You can really make a difference if you don't send a human in a van into a location that has a vulnerable population," Raptopoulos said.

Matternet is starting with 10 to 20 deliveries each day. But if everything goes to plan, the company could facilitate "thousands of deliveries" each month. "If we can prove the model with one [store] and we see value there, and the economics are working out, then it can be rolled out to multiple locations." https://www.engadget.com/drone-wing-zipline-matternet-everdrone-coronavirus-133021691.html

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Unmanned drones to slash NHS delivery times to one-fifth of road 'n' rail transport 26 MAY 2020 Gareth Corfield BIO EMAIL TWITTERSHARE

Remote-control drones are to be used to deliver coronavirus testing kits to a remote Scottish hospital – and they're being flown outside of the operators' direct line of sight.

"Our trial in Argyll and Bute provides an important short-term response to the current pandemic and lays the foundations from which to grow a permanent drone delivery operation across a network of healthcare facilities around the country," said Skyports chief exec Duncan Walker.

His company will fly unmanned delivery drones made by German company Wingcopter. The craft will fly the10.5 miles between Lorn and Isles hospital in Oban and Iona Community Hospital in Craignure. A lengthy journey by road and ferry, Skyports reckons it will take just 15 minutes by drone.

Average projected speeds of 40mph for the drone compare very favorably with an hour and a quarter to cover the 12 miles, (including roads) via the ferry between Oban and Craignure.
https://www.theregister.co.uk/2020/05/26/drone_deliveries_bvlos_isle_mull/

EASA publishes certification guidance for small VTOL aircraft Kate Sarsfield 26 May 2020

European regulators have published proposed certification guidance for the new wave of hybrid and electric vertical take-off and landing aircraft in a move designed to reflect the relative maturity of the platforms being proposed by developers.

Published on 25 May, the guidelines are described by the European Union Aviation Safety Agency (EASA) as “the latest milestone in its roadmap to enable safe VTOL operations and new air mobility in Europe”.

Volocopter is flight testing its X2 prototype

EASA laid the first “building block” for the regulations in July 2019 with the publication of the certification framework for manufacturers to start developing “innovative” air taxi vehicles.

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The "second block" proposes certification requirements for electric and hybrid propulsion systems and is currently subject to a public consultation running until 19 June. The "third block" proposes compliance for certification requirements such as the structural design envelope, flight-load conditions, crashworthiness, capability after bird impact, design of fly-by-wire systems, safety assessment processes, lightning protection and minimum handling qualities.

"The requirements and guidance cater for a wide variety of flying vehicle architectures and enable innovative designs," it says. https://www.flightglobal.com/business-aviation/easa-publishes-certification-guidance-for-small-vtol-aircraft/138532.article

Zipline Medical Drones Begin Flying in the United States Ira Boudway May 27, 2020

A staff member prepares a Zipline drone to deliver medical supplies in Omenako, Ghana

On the Friday before Memorial Day, a six-foot long, red-and-white drone took off from a field in Kannapolis, North Carolina, flew fifteen miles west over suburban Charlotte to Novant Health's Huntersville Medical Center and dropped a box of protective masks in a designated spot next to the parking lot. The flight, about 30 minutes round-trip, marked the first U.S. delivery for Zipline Inc., a California drone start-up that has been transporting medical supplies in Rwanda and Ghana since 2016. It is, Zipline says, the longest commercial drone delivery route in the country.

Zipline's U.S. debut comes almost six months ahead of schedule. The company had planned to begin service in North Carolina in October under an agreement signed at the beginning of this year with Novant Health which runs fifteen hospitals and nearly 700 clinics in the area. Zipline and Novant decided to accelerate their plans after the Coronavirus outbreak. https://www.bloomberg.com/news/articles/2020-05-27/zipline-medical-drones-begin-flying-in-the-united-states

How Many Drones Are Smuggling Drugs Across the U.S. Southern Border? Nobody knows. Tim Wright AIR & SPACE MAGAZINE JUNE 2020

Late on the night of April 24, 2015, 19-year-old Brayan Valle stood in a farm field half a mile north of the Mexico border near Calexico, California. When a drone launched in Mexico buzzed out of the darkness, Valle used a radio controller to command the commercial-grade,

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multirotor aircraft to drop a seven-pound bundle enclosed in bubble wrap. As Valle collected the bundle, the drone flew back to Mexico.

In a process that took hours to complete, the Mexican drone returned three times to drop additional seven-pound bundles. With the fourth and final bundle stuffed inside a backpack, Valle walked up to Highway 98, where he flagged down his new friend, 18-year-old Jonathan Elias. Throwing the backpack into the trunk of Elias' car, Valle hopped in the front seat and the pair drove off. Neither of them knew that U.S. Customs and Border Protection (CBP) agents had picked them up on a remote camera. When CBP agents stopped and searched their car, they found 28.55 pounds of heroin, worth nearly $1.5 million. Although the teens wound up in prison, the drone and its Mexico-side pilot made a clean getaway. Valle and Elias were convicted in the country's first seizure of a narcodrone, an uncrewed vehicle transporting illegal drugs from Mexico to the United States. Nobody knows how many narcodrones cross the border each day, and nobody knows how to stop them from coming.
https://www.airspacemag.com/flight-today/narcodrones-180974934/?spMailingID=42594241&spUserID=NzY1MjM2OTMxNzYS1&spJobID=1762644823&spReportId=MTc2MjY0NDgyMwS2

A rice-planting drone is coming to China Sean Captain May. 27th 2020

Drone maker XAG today announced a new rice-planting drone it says can not only take over the work of manual planting, but also complete that work far faster than humans can. Traditionally, farmers seed rice paddies by hand, trudging through the mud to distribute the seeds.

The company conducted a test at a large agriculture demonstration site in Guangdong province. First, two workers were invited to spread five kilograms of seeds by hand, taking 25 minutes to cover 1,200 square meters. XAG's drone then covered an equal area in just two minutes. The company says its drone can seed 50,000 square meters per hour, doing the work of at least 50 laborers.

The key innovation is a JetSeed mounted to the underside of the drones. It generates high-speed airflow to project seeds accurately into the topsoil. One capability XAG also touts is their ability to fly at night when the winds are gentler and it's easier to spread seeds evenly.

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Drones could be a way to leapfrog automation technology for small farms in Asia. They have traditionally not automated with expensive tech like driverless tractors due to high costs. Now with drones able to do the planting, these small farms could get access to automation technology at much lower prices. https://dronedj.com/2020/05/27/a-rice-planting-drone-is-coming-to-china/#more-29485

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How Drones Can Monitor Explosive Volcanoes Jess Brown May 27, 2020

Researchers from the German Research Centre for Geosciences GFZ in Potsdam, are now presenting the results of a series of survey flights with optical and thermal imaging cameras at the Santa Maria volcano in Guatemala. Drones were utilized to observe the lava dome, a thick plug of lava. The researchers were able to show that the lava dome shows movements on two different time scales: slow expansion and growth of the dome and fast extrusion of thick lava.

"We have equipped a drone with different cameras. We then flew the drone over the crater at various intervals, measuring the movements of lava flow and a lava dome using a type of stereo photography with a precision never seen before." By comparing the data from the drone, we were able to determine the flow velocity, movement patterns and surface temperature of the volcano. The researchers also succeeded in deriving the flow properties of the lava. We have shown that the use of drones can help to completely re-measure even the most dangerous and active volcanoes on Earth from a safe distance.

The two cameras of the drone were able to take high-resolution photos and thermal imaging. By using a computer algorithm, the researchers were able to create complete and detailed 3D models from these images. They obtained a 3D topography and temperature model of the volcano with a resolution of only a few centimeters. https://www.coverdrone.com/how-drones-can-monitor-explosive-volcanoes/?utm_source=Coverdrone+email+subscribers&utm_campaign=4b9c8fe0b5-Coverdrone+Email+Campaign+28.05.20&utm_medium=email&utm_term=0_3033eb7817-4b9c8fe0b5-113470153

New York lockdown drone video captures richness of the city Sean Captain May. 28th 2020

Coronavirus lockdown videos have become a genre unto themselves. By now we've seen so many hauntingly empty vistas of great cities like Paris, London, New York, and Rome. Yet a fresh New York lockdown drone video by YouTuber DroneFanatic shows more of the city than you would expect, and from fantastic heights and angles.

Running 5 minutes, 38 seconds, the video leaves plenty of room to take in an expansive view of the city — mainly Manhattan, which accounts for nearly all of the video. The biggest landmarks naturally appear. You see the lantern of the Statue of Liberty and the spire of the Chrysler Building in the first few seconds, for instance. A smooth glide up Park Avenue takes you to Grand Central Station, with a close-up flyby of the clock and great statue of Mercury, god of travel. The World Trade Center is frequently in the background of shots taken downtown.

The video glides lovingly over the dome of an old courthouse and the tower of an old library that I knew well as a local but have never seen in a movie or postcard. DroneFanatic clearly understands the city well and uses that knowledge to portray the places that the locals know and love. The one aspect that's hard to recognize, though, is the emptiness of the once-teeming city. See the video at: https://dronedj.com/2020/05/28/new-york-lockdown-drone-video-captures-richness-of-the-city/

AIRT and DRONERESPONDERS Launch Spring 2020 Public Safety UAS Survey May 27, 2020 News

The 2nd edition of the AIRT-DRONERESPONDERS Public Safety UAS Survey contains a series of questions designed to gauge the growth of public safety drone programs over the past year, as well as the potential impact of current news events and other emerging topics facing America's first responders.

"The goal for this latest research initiative is to conduct a deeper dive into how public safety agencies and emergency management stakeholders are using UAS and related technologies," says Christopher Todd, Executive Director, AIRT. "We also want to better understand if the needs of first responders are being met by the commercial drone industry."

Todd says the research output will again be made available at no cost to people who register for free at the DRONERESPONDERS website. All public safety program leaders, managers, operators, and support staff are welcome and encouraged to take the AIRT-DRONERESPONDERS Spring 2020 Public Safety UAS Survey by visiting http://survey.droneresponders.org https://uasweekly.com/2020/05/27/airt-and-droneresponders-launch-spring-2020-public-safety-uas-survey/?utm_source=rss&utm_medium=rss&utm_campaign=airt-and-droneresponders-launch-spring-2020-public-safety-uas-survey&utm_term=2020-05-28

Documentary shows the development of the AKINCI drone Josh Spires May. 28th 2020

A documentary on Turkey's first armed drone has been released on YouTube by arms maker Baykar Technologies.

The AKINCI drone is able to fly for up to 24 hours, has a maximum flight altitude of 40,000 feet, and is able to carry a payload with a maximum capacity of 2,976 pounds. The drone has a wingspan of 65-feet and has a maximum take-off weight of 12,125 pounds. The drone comes standard with two 450-horsepower engines but can be equipped with 750-horsepower engines or locally made 240-horsepower engines.

AKINCI will be equipped with a fully autonomous flight system and triple-redundant auto-pilot system. The drone is also equipped with an active electronically scanned array radar and Gokdogan and Bozdogan air-to-air missiles. It is also able to fire cruise missiles to take out strategic targets.

The documentary is well made but isn't in English. It is worth a watch, but be sure to have captions on . https://dronedj.com/2020/05/28/drone-documentary-outlines-the-development-of-a-turkish-drone/

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NEWSLETTER
May 29th, 2020

It's the Final Day of Our 3rd Annual Global Drone Industry Survey - Don't Miss Your Last Chance to Participate!

We hope this email finds you safe and healthy.

It's the last day of our biggest ever Annual Global Drone Industry Survey! If you're a drone company or have adopted drones into your business, don't forget to take part in our survey, which, as always, will result in a free whitepaper bringing you the latest industry perspectives! **The Global Drone Industry Barometer 2020** is a huge part of our efforts to make the drone industry more transparent and this year we're aiming to once again break our previous record of survey responses. **The more participants, the better the results - so don't miss your chance!** https://www.droneii.com/

Viasat, lured by broadband subsidy opportunity, eyes 300-satellite LEO constellation Caleb Henry May 28, 2020

Viasat CEO Mark Dankberg

WASHINGTON — Viasat says it is open to building a constellation of nearly 300 satellites in low Earth orbit if it can qualify for some of the $20.4 billion in broadband subsidies the U.S. Federal Communications Commission intends to dole out under the Rural Digital Opportunities Fund.

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Viasat wants the FCC to approve a LEO constellation of 288 satellites it says could help close the digital divide in the United States. It would operate at 1,300 kilometers using the same Ka- and V-band frequencies recently authorized for MEO, according to a May 26 FCC filing. Each satellite would support 96 gigabits per second of throughput, enabling a collective 27 terabits of internet connectivity fanning out 60 degrees north and south of the equator.

Dankberg said LEO would enable Viasat to send signals fast enough to drop latency below 100 milliseconds — a bench mark the FCC has given considerable weight in deciding who receives subsidies from its Rural Digital Opportunities Fund. https://spacenews.com/viasat-lured-by-broadband-subsidy-opportunity-eyes-300-satellite-leo-constellation/

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