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8Jun19

Amazon's Satellite Project Will Cost Billions, Jeff Bezos Says Matt Day June 6, 2019

Amazon.com Inc. plans to spend billions of dollars building a network of thousands of satellites to provide broadband internet service, Chief Executive Officer Jeff Bezos said. The Project Kuiper initiative, disclosed <u>earlier this year</u>, is the type of big bet the company needs to keep making as its massive scale renders smaller endeavors less meaningful.

The project, he said, is "a very good business for Amazon" because it requires a big capital expenditure. It's multiple billions of dollars of capex. Amazon is a large enough company now that we need to be doing things that, if they work, can actually move the needle."



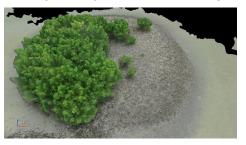
Jeff Bezos talks with Jenny Freshwater during a keynote session in Las Vegas on June 6.

In filings with the International Telecommunications Union, Amazon said it aimed to place 3,236 satellites into low Earth orbit, and use them to beam broadband internet connectivity across the globe. "By

definition you end up accessing people who are underbandwidthed," Bezos said. "Rural areas, remote areas. And I think you can see that access to broadband is going to be very close to a fundamental human need." https://www.bloomberg.com/news/articles/2019-06-06/amazon-s-satellite-project-will-cost-billions-bezos-says

Embry-Riddle, UCF Partner To Map Oyster Reefs Using UAS June 5, 2019 News

Twenty-one oyster reefs near Edgewater, Fla., are the focus of a new partnership between



Embry-Riddle Aeronautical University and the University of Central Florida to remotely map regions that would otherwise be difficult and expensive to monitor on site.

The goal of the research is simple: Using Unmanned Aircraft Systems, survey the reefs to gather information, including exact oyster counts and virtual imaging, without

visiting the locations in person. If the project proves successful, according to Dr. Dan Macchiarella, professor of Aeronautical Science, it would signal a clear change in the way environmental data have traditionally been collected.

"The alternative to remote sensing is to physically travel to a location, and, in the case of oyster beds, many are located in hard-to-access areas like the middle of mangrove tree stands,"



Macchiarella said. "There are other applications for remote sensing to sample wildlife, too, including using the technology to locate fish nests in remote river locations." <a href="https://uasweekly.com/2019/06/05/embry-riddle-ucf-partner-to-map-oyster-reefs-using-uas/?utm_source=newsletter&utm_medium=email&utm_campaign=uasweekly_daily_newsletter_06_06_2019&utm_term=2019-06-06

FAA Grants Approval to Fly Over People for Hensel Phelps Using ParaZero Safety System June 5, 2019 FAA & Drone Laws



Drone safety systems company, ParaZero Technologies Ltd, announced today that the Federal Aviation Administration has approved a first-ever waiver allowing general contractor, Hensel Phelps, to fly over people using ParaZero's SafeAir Phantom Parachute System. Hensel Phelps is one of the largest general

contractors in the United States and has been leading the industry in adoption of UAS technology for construction.

This waiver represents the first time the FAA has collaborated with industry in developing a publically available standard, worked with an applicant to ensure the testing and data collected acceptably met the standard, and issued a waiver using an industry standard as a basis to determine that a proposed sUAS operation can be safely conducted under the terms and conditions of a waiver under Part 107. https://uasweekly.com/2019/06/05/faa-grants-approval-to-fly-over-people-for-hensel-phelps-using-parazero-safety-

BAAM Tech Has Released Its New VTOL Fixed Wing The Elipse June 5, 2019 News



Starting at only \$4000, the Elipse has options for a 36mp, or 24mp RGB camera for mapping, the Altum from Micasense, or the Sequoia multispectral, or FlirVue Pro R. Add these with the combination of the high-quality BAAM Tech PPKsystem, and the Elipse is a true professional grade VTOL fixed wing at a fraction of the price.

It offers flight times up to 80 minutes and a vertical takeoff and landing system. It has two batteries - one for takeoff and landing and one for fixed wing flight. You need not worry about depleting the flight pack and not be able to land like single battery systems.



It comes with a 2-mile radio system that connects wirelessly to an android phone or computer for flight planning. Much like the DJI product line, the phone mounts directly to the radio making single operator flights easy. It also has an option for a radio relay to 5 miles. <a href="https://uasweekly.com/2019/06/05/baam-tech-has-released-its-new-vtol-fixed-wing-the-elipse/?utm_source=newsletter&utm_medium=email&utm_campaign=uasweekly_daily_newsletter_06_06_2019&utm_term=2019-06-06

Boeing Invests In Commercial UAS Services Provider Robotic Skies June 6, 2019 News



Boeing announced its investment in Robotic Skies, a services provider that connects manufacturers and operators of commercial unmanned aircraft systems with a global network of more than 170 civil aviation authority-certified repair stations.

Boeing HorizonX Ventures led this funding round with participation from Thayer Ventures, Sun Mountain Capital and KickStart Seed Fund. The investment builds on a <u>previously-announced collaboration</u> with Robotic Skies, Boeing Global Services and its subsidiaries Aviall and Jeppesen to provide enhanced commercial UAS services.

Robotic Skies is the only global network of certified UAS maintenance centers. It offers field service programs to keep UAS flying safely, efficiently and affordably around the world. Founded in 2014, it has more than 170 certified repair stations across more than 40 countries. <a href="https://uasweekly.com/2019/06/06/boeing-invests-in-commercial-uas-services-provider-robotic-skies/?utm_source=newsletter&utm_medium=email&utm_campaign=uasweekly_daily_newsletter_06_07_2019&utm_term=2019-06-07

ParaZero Launches ASTM Compliant SafeAir Mavic June 6, 2019 News

Drone safety company ParaZero Technologies Ltd , together with the Northern Plains UAS Test



Site has completed the testing and compliance process for ParaZero's SafeAir Mavic.

It was designed to enable civil aviation authorities, like the FAA, to determine whether a parachute system is airworthy for flight over people. The standard defines 45 aerial deployment tests in

various failure scenarios, verified by a third party.



It is a parachute system that monitors UAS flight in real time, identifies critical failures and autonomously triggers a parachute. The system contains a flight termination system, a black box to enable post-deployment analysis and a warning buzzer to alert people below of the falling drone.

"Third-party validation is a necessary step for the industry to help advance operations of small UAS in various environments," said Nicholas Flom, the Executive Director of the Northern Plains UAS Test Site. UAS operators will also receive compliance documentation with the purchase of the SafeAir Mavic system, including NPUASTS' third-party testing report. This documentation will provide validation which operators can submit with a waiver application for operations over people. <a href="https://uasweekly.com/2019/06/06/parazero-launches-astm-compliant-safeair-mavic/?utm_source=newsletter&utm_medium=email&utm_campaign=uasweekly_daily_newsletter_06_07_2019&utm_term=2019-06-07

Recreational Flyers – Interim Safety Guidance Available to Explain How, When and Where You Can Fly Your Drone



The Federal Aviation Administration has issued interim safety guidance for <u>recreational flyers</u> that reinforces recent changes to how, when and where users can fly drones for recreational purposes. The FAA's <u>Advisory</u> Circular outlines eight conditions:

- 1. Fly strictly for recreational purposes.
- 2. Follow the safety guidelines of a community based organization.
- 3. Keep your drone within your line of sight, or within the visual line-of-sight of a visual observer who is co-located and in direct communication with you.
- 4. Operate in a manner that does not interfere with, and gives way to, any manned aircraft.
- 5. Do not fly in controlled airspace (around and above many airports) unless you are flying at a <u>recreational flyer fixed site</u> that has an agreement with the FAA.
 - 1. Flight in controlled airspace is temporarily limited to these fixed fields. The FAA is upgrading the online system, known as LAANC (the Low Altitude Authorization and Notification Capability), so that recreational operations can get automated airspace authorizations to fly in controlled airspace. This system is currently only available for certified Part 107 drone pilots.
 - 2. Do not contact the local FAA Air Traffic facilities for airspace authorizations.



- 6. Fly your drone at or below 400 feet when in uncontrolled or "Class G" airspace.
- 7. Pass an aeronautical knowledge and safety test.
- 8. Register and externally mark your drone, and carry proof of registration with you. https://mail.google.com/mail/u/0/#inbox/WhctKJVRLGvkKWQpzjfmtVFTLkGKfNfJbFbpLGdZzRTgFjxTkMLlndHFwSnmWCJsHVrvhmG

Public perception remains a barrier to UK drone adoption, PwC research finds

APPLICATION BUSINESS HEADLINE NEWS RESEARCH UK ALEX DOUGLAS JUNE 6, 2019



It found that less than a third of the public, just 31%, feel positive about drones, while more than two thirds are concerned about the use of drones for crime.

This figure is a contrast to the 56% of business leaders who are positive about drones and their benefits, a number which rises to 83% when asking those who already use drones in their business.

It details how 35% of business leaders believe drones are not being adopted in their industry because of these negative perceptions despite the fact 43% of those surveyed believe their industry would benefit from drone use.

In conclusion to the report, the PwC outlined how 'education, accountability and enforcement' remain key to building trust as underpinning the negative perception of drones is a lack of understanding from both business and the public of drone applications.

https://www.commercialdroneprofessional.com/public-perception-remains-a-barrier-to-uk-drone-adoption-according-to-pwc-research/?utm_source=Email+Campaign&utm_medium=email&utm_campaign=45819-304047-Commercial+Drone+Professional+DNA+-+2019-06-08

Drone Delivery Canada signs commercial agreement with Air Canada APPLICATION

DELIVERY ALEX DOUGLAS JUNE 7, 2019



Depending on the terms of the Agreement and subject to DDC obtaining required regulatory approvals, DDC is expecting to build and operate up to 150,000 drone delivery routes in Canada. The routes will include timetables, flight schedules, payload capacities, type of drones to be deployed, and payment terms.



Tony Di Benedetto, CEO of DDC, commented: "This agreement greatly accelerates our commercial roll-out in Canada. Our drone delivery services will be extensively marketed as we work to establish operations across the country leveraging Air Canada Cargo's brand presence and their established sales network and marketing reach. Air Canada's Cargo's expertise will support our efforts to establish DDC as Canada's first national drone cargo solution. Next, DDC hopes to pursue even larger markets in the United States and Europe."

https://www.commercialdroneprofessional.com/drone-delivery-canada-signs-commercial-agreement-with-air-canada/?utm_source=Email+Campaign&utm_medium=email&utm_campaign=45819-303994-Commercial+Drone+Professional+DNA+-+2019-06-07

Taiwan tests Terra Drone and Unifly's drone traffic management system BUSINESS DRONES AT WORK INTERNATIONAL NEWS ALEX DOUGLAS JUNE 7, 2019



The test run of the UTM was conducted at Fukushima Robot Test Field in Japan in the presence of more than a dozen officials from Taiwan's Ministry of Economic Affairs, Ministry of the Interior, Industrial Technology Research Institute, National Chung-Shan Institute of Science and Technology, and Taiwan Association of Information and Communication Standards. Several

private companies, such as Drone Dynamics and C-Link Technology, were also part of the delegation.

The demonstration showcased how real-time tracking and controlling of multiple drones could help to bridge the gap between manned and unmanned airspace and ensure safe drone operations for all.

Yosuke Kaneko, head of UTM at Terra Drone, commented: "The Taiwanese government realizes how important UTM is for safe and efficient drone operations, and is exploring the possibility of deploying our UTM system in the country. In the future, no country will allow drone operations without knowing who is flying the drone and where."

https://www.commercialdroneprofessional.com/taiwan-tests-terra-drone-and-uniflys-drone-traffic-management-system%EF%BB%BF/?utm_source=Email+Campaign&utm_medium=email&utm_campaign=45819-303994-Commercial+Drone+Professional+DNA+-+2019-06-07



10Jun19

The FAA devises a new strategy for Remote ID Jun 8, 2019 Kara Murphy



Remote identification is the concept that drones need to be equipped with a digital license plate. Knowing who is flying an unmanned aerial system where, and when, is imperative for increasing safety and security. Two senators on opposite sides of the political spectrum even urged U.S. Transportation Secretary Elaine Chao to take

<u>action</u> recently.

This Thursday, the Federal Aviation Administration informed its Drone Advisory Committee that a final rule on remote identification of drones could take up to two years to implement. This latest development also finds them looking to the committee for alternate strategies including how to get operators to voluntarily use remote ID.

https://www.dpreview.com/news/3411724594/the-faa-devises-a-new-strategy-for-remote-id

Singapore's Indoor Drone Maps in 3D, in Real Time Singapore Ministry of Defence May 31, 2019)



With their indoor drone (top right), the team from the Singapore Ministry of Defence has successfully mapped the DSO library (above), an area roughly equivalent to a 5-room flat.

Using just two drones, a team of DSO engineers have constructed a 3D map of a previously uncharted area in real time. Working simultaneously, their indoor

mapping drones have successfully mapped DSO's library — around the size of a 5-room flat — in just 1min 30s.

These drones can explore and navigate autonomously without any prior set-up or the use of the Global Positioning System. DSO's indoor drone uses a smart navigation algorithm that allows it to map in real time and track its own location based on its distance to the walls and objects it is mapping. The team's algorithm also allows multiple drones to work in tandem and contribute to the same mapping image so that they can map faster.

Information from both drones are then consolidated and sent to a command post in real time. The result is a precise 3D model of the apartment's interior, rendered in a true-to-scale



qrid. http://www.defense-unmanned.com/article/3494/singapore%E2%80%99s-indoor-drone-maps-in-3d%2C-in-real-time.html

AOPA Offers New Resources for Drone Pilots: Education, Training, Presentations and a Guide to Part 107 Certification Miriam McNabb June 10, 2019



"The drone community is growing fast, and AOPA wants to help welcome these new pilots to the world of flight," says the Aircraft Owners and Pilots Association. The organization provides a wide variety of resources for drone pilots: education, training, discounts, and networking opportunities.

AOPA is bridging the gap between the manned aircraft and drone communities – working towards safe integration of drones into the national airspace. In addition to advocacy work, AOPA provides an impressive library of resources for new pilots – starting with their online guide to certification. The Guide clarifies the process, providing necessary links including the certification standards, study guides, training course and sample test. There is even a checklist for applicants to ensure that they've completed all of the right steps.

"Drone Minute" is a series of video shorts covering training topics like safety, insurance, and drone operations. "Seminars to Go" gives speakers at local educational events a keynote presentation and PowerPoint on drone-related topics, and the Drone Pilot Newsletter provides up-to-date news and information for the drone community. Through a relationship with Droners.io, pilots can find jobs: a "Pilot Protection Services" plan gives drone pilots access to legal services. Additionally, relationships with training schools and drone expos offer discounts to AOPA members. https://dronelife.com/2019/06/10/aopa-offers-new-resources-for-drone-pilots-educationtraining-presentations-and-a-guide-to-part-107-certification/

Deloitte to write urban air mobility concept of operations for NASA June 10, 2019 Philip Butterworth-Hayes Urban air mobility



Deloitte has announced today that it has earned a contract from the National Aeronautics and Space Administration to develop a Concept of Operations for urban air mobility. The project is part of the NASA broader effort which focuses on the development and introduction of new air vehicles into the air transportation system. The 12-month project will include the development of an

initial ConOps to be shared with the broader aviation and urban air mobility communities. "With much change happening in aviation, NASA is asking what all of this change means to



mobility and what will be needed to safely accommodate new air vehicles in our air transport system," said Chris Metts, Deloitte Consulting LLP. https://www.unmannedairspace.info/urban-air-mobility-concept-of-operations-for-nasa/

Police drone pivotal in finding on-the-run men APPLICATION CRIME EMERGENCY SERVICES HEADLINE NEWS TECHNOLOGY UK VIDEO ALEX DOUGLAS JUNE 10, 2019

The device, sent out by Lincolnshire police, was used to track down three men who had fled from a nearby road traffic collision then guide in an officer who made the arrest.

Commenting on the joint work between the Lincolnshire Police, Gainsborough Police, the drone team, the dog department and the specials, the supervising sergeant commented on how the drone was vital. "Without the drone, we would never have found them."

The drone team took to Twitter to release footage of the work done. See the video here: <a href="https://www.commercialdroneprofessional.com/police-drone-pivotal-in-finding-on-the-run-men-wef-8B8/8Bf/?utm_source=Email+Campaign&utm_medium=email&utm_campaign=45819-304167-Commercial+Drone+Professional+DNA+-+2019-06-10

11Jun19

The UAS Operations division at UND Aerospace and Australian-based Bee Innovative will work together to test precision pollination techniques on sunflower fields near Bismarck, N.D. (Photo courtesy of UND)

UND Aerospace, Australian tech firm to test precision pollination Agweek Wire Reports Jun 5, 2019



GRAND FORKS, N.D. — An Australian startup company that works on bee tracking will collaborate with the University of North Dakota to test how precision pollination can increase yields on pollination-dependent crops.

UND, the North Dakota Agricultural Products Utilization

Commission and the National Sunflower Association worked to bring Bee Innovative from Australia to North Dakota. The venture will begin testing precision pollination, using drones equipped with its BeeDar technology to track bees and monitor two sunflower fields in the Bismarck, N.D., area. "BeeDar is a radar-like sensor which identifies, tracks and reports



honeybee pollination activity in near real time," said Kate Lyall, Bee Innovative's chief technology officer. "By tracking honeybees in sunflower crops, farmers can make better use of hives to improve pollination, increasing yields and the value of their crop."

With nearly 100 commercial crops around the world relying on bee pollination, Lyall said Bee Innovative's technology provides an opportunity to significantly increase agricultural production without using more land. In Australia, Bee Innovative's technology has increased blueberry production by 20 percent. North Dakota's goal is for a 10 percent increase in sunflower production. https://www.agweek.com/business/agriculture/4622225-und-aerospace-australian-tech-firm-test-precision-pollination

BREAKING NEWS: EU publishes new rules on European drone operation BUSINESS EUROPE HEADLINE NEWS POLITICS REGULATION TECHNOLOGY ALEX DOUGLAS JUNE 11, 2019



They have been designed to help to protect safety and privacy of EU citizens while enabling the free circulation of drones and a level playing field within the European Union.

Patrick Ky, executive director of EASA, commented: "Europe will be the first region in the world to have a comprehensive set of rules

ensuring safe, secure and sustainable operations of drones for commercial and leisure activities."

The new rules include technical as well as operational requirements and define the new capabilities a drone must have to be flown safely. For instance, new drones will have to be individually identifiable, allowing the authorities to trace a particular drone if necessary.

The rules cover each operation type, from those not requiring prior authorization to those involving certified aircraft and operators, as well as minimum remote pilot training requirements. The new rules will replace existing national rules in EU Member States. <a href="https://www.commercialdroneprofessional.com/breaking-news-eu-publishes-new-rules-on-european-drone-operation/?utm_source=Email+Campaign&utm_medium=email&utm_campaign=45819-304274-Commercial+Drone+Professional+DNA+-+2019-06-11



Innoviz Technologies seals £133m funding round to support LiDAR

initiatives application business international news software alex douglas June 11, 2019



It brings the provider of LiDAR sensors and perception sofwtare's total funding to £198m. The funding will support several initiatives, including its LiDAR hardware offerings.

Additionally, Innoviz says it will leverage the latest funding to benefit broader business activities, including accelerating its path to

mass production and also the commercialization of its LiDAR solutions.

Omer Keilaf, CEO, commented: "In a short amount of time we have created an industry-leading LiDAR solution from the ground up and secured partner and customer wins to push it into series production for one of the top automakers in the world."

https://www.commercialdroneprofessional.com/innoviz-technologies-seals-133m-funding-round-to-support-lidar-initiatives%EF%BB%BF/?utm_source=Email+Campaign&utm_medium=email&utm_campaign=45819-304274-Commercial+Drone+Professional+DNA+-+2019-06-11