UAS and SmallSat Weekly News

Contents

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

30Dec17

NCDOT's Division of Aviation to host more drone workshops in 2018 CBS North Carolina December 28, 2017

RALEIGH, N.C. (WNCN) – The N.C. Department of Transportation's Division of Aviation will be hosting a series of drone workshops in 2018 after successful workshops were held earlier this year.

In 2017, over 500 attendees at four free workshops learned about drone flight operations, data management and dozens of various applications for government and commercial users, the agency said in a press release.

The workshops also featured presenters who provided updates on the latest changes in federal and state drone regulations and gave live flight demonstrations.

"Drone technology is quickly advancing and so are the possibilities for a business or government organization interested in using one," said Basil Yap, unmanned aircraft systems program manager for NCDOT. "The folks in attendance can expect to come away with a realistic understanding of the possible applications for drone technology and what it takes to effectively implement drones into their operations."

The NCDOT said in the release that they hope to continue to use the workshops as a way to show that drone technology can be safe and beneficial. http://wncn.com/2017/12/28/ncdots-division-of-aviation-to-host-more-drone-workshops-in-2018/

California's deadly Thomas Fire Riley Morgan

Drone footage over Ventura, northwest of Los Angeles, has followed the path of the deadly 'Thomas Fire' that has wreaked havoc in California and forced tens of thousands of locals to flee. https://www.sbs.com.au/news/eerie-drone-footage-shows-path-of-california-s-deadly-thomas-fire

The wildfires that began on December 4 are now the largest in the state's recorded history, as firefighters work to contain the blazes.

The eerie footage from videographer Brian van der Brug pictures a suburban street in Ventura that has been completely wiped out by the fires.

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Dramatic footage of California wildfires from highway

Cars drive through empty neighbourhoods as houses can be seen burned to the ground. Only charred ashes remain in parts of the coastal town.

The hilly and windy streets surrounding Ventura are barren with scorched trees. The footage finishes as the drone enters an area on the outskirts of the fire.

Humboldt County fire crews hose down residual heat inside a home that was destroyed by the Thomas Fire on December 17, 2017

The Thomas Fire has destroyed more than 281,000 acres, 1,063 homes, businesses and other structures.

One firefighter died trying to contain the fire in Southern California and a 70-year-old woman was killed as a result of the blaze, according to authorities. The fire is now 88 per cent contained. https://www.sbs.com.au/news/eerie-drone-footage-shows-path-of-california-s-deadly-thomas-fire

4 Surprising New Ways Businesses Are Using Drones By Lauren Barack

In late 2016, Michael E. Jordan wanted to boost holiday sales for his fledgling athletic-wear company. So he hired a drone operator to shoot a video interspersing footage with mannequins and people wearing UNRL clothing. The video went viral, getting 50,000 Facebook views, and UNRL's sales over that Black Friday weekend tripled the prior year's.

Hired by insurance companies to investigate claims, Jeremy Reynolds, COO of forensics investigation firm RTI Group, in Stevensville, Maryland, had a client that wanted a mine surveyed. Underground, and presumably unstable, the mine posed a problem: The site was too unsafe to send a person into, and a rolling robot could get blocked by debris.

Flying a drone underground is hardly simple: There's no access to GPS and you can't watch the drone as it flies. But it worked, says Reynolds, and he can't think of another way the mine could have been surveyed.

Cody Creelman, a veterinarian based in Airdrie, Alberta, travels hundreds of miles to visit cattle ranchers who are clients of Veterinary Agri-Health Services, where he's co-owner and managing partner.

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A Canadian cattle farm, as seen from a drone owned by Veterinary Agri-Heath Services' Cody Creelman.

He puts the UAV out to pasture to make sure all cattle are rounded up while he runs medical exams such as pregnancy tests.

Clients hire Kevin McGrath, a Sylvania, Ohio-based home inspector, to ensure that the multimillion-dollar houses they're buying are in good shape. McGrath's next step will be attaching a thermal camera to the drone. A thermal reading of a structure's walls and rooftops shows property owners where repairs will save them serious money.
https://www.inc.com/magazine/201802/lauren-barack/drone-applications-business.html

Spain will use drones to catch smugglers in Gibraltar and Andorra

Alex Dunham alex.dunham@thelocal.com 29 December 2017

Spain's tax agency is set to invest nearly half a million euros in drones and state-of-the-art hidden camera equipment in the hope of spotting cigarette smugglers and money mules at two of its most troublesome borders.

In recent times, Spain's tax agency has lost up to a €1 billion a year to cigarette smuggling that takes advantage of the British overseas territory's lower cigarette prices.

In tiny Andorra, as well as in the bordering Catalan town of Seo de Urgel, the main problem is the illicit transfer of huge amounts of undeclared cash into the principality.

In a bid to tackle their huge losses, the Agencia Tributaria is coughing up €474,000 in two security camera systems. The first of these will be a fleet of drones, each one equipped with movement, vehicle and face recognition programmes. Once targets have been sighted and pinpointed by customs officers, the drones have the ability to follow suspects to facilitate a pursuit. https://www.thelocal.es/20171229/spain-drones-smugglers-gibraltar-andorra-contraband

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

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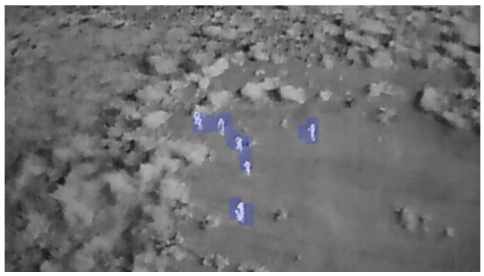
'Predator' Vision Drones Get AI to Spot Poachers Jeremy Hsu | December 29, 2017



The thermal infrared camera imagery taken by a drone operated by the Air Shepherd conservation group during a field demonstration.

Poachers illegally hunting elephants and rhinoceroses under the supposed cover of darkness may soon find themselves being tracked by "Predator" vision drones armed with artificial intelligence. A wildlife conservation group called Air Shepherd has already tested the AI system in a field demonstration and hopes to eventually expand such operations to various national parks in Africa. Like the alien hunters from the "Predator" science fiction films, Air Shepherd's drones use thermal infrared vision to detect the heat coming from warm objects such as human or animal bodies.

"Our main goal was to assist Air Shepherd in unmanned autonomous vehicle (UAV) operations and reduce the human effort needed to monitor the UAV cameras at night," says Fei Fang, an assistant professor at the Institute for Software Research at Carnegie Mellon University in Pittsburgh. "In the future, we also want to automatically adjust the flight route of the UAV to automatically track the poachers." http://blogs.discovermagazine.com/lovesick-cyborg/2017/12/29/predator-vision-drones-get-ai-to-spot-poachers/#.Wkrbm1WnF0w

FROM HOLLYWOOD TO AIRBASES AND BACKYARDS: WHY 2018 WILL BE THE YEAR OF THE DRONE NICOLAS GROFFMAN 30 DEC 2017

Quadcopter drones fly over the Statue of Liberty.

Two factors will propel a massive increase in drone use this year. First, there is the tendency towards smarter, safer, cheaper, more autonomous drones. Second, and more important, is that regulators have caught up with drone technology. The UK, China and several other countries all issued sensible and easily enforceable drone regulations in 2017. These will not slow the market, as some have predicted, but will add the armour of legality to drone purchase and use, which will bring the new technology to mainstream buyers.

A 'no fly zone' for drones sign outside the Kremlin.

Robert Rea | Axcel Innovation | Charlottesville and Portsmouth, VA
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Established manufacturers have been watching the market and waiting for their moment to get in on the act. Many of these companies spent the past two years refining their approach and poaching top engineers and designers from existing drone companies . The manufacture of technology – real technology, that makes things happen in real life, as opposed to "tech", which is a buzzword used by people who make data-crunching applications for the internet – is still in the hands of the Panasonics, the Boeings and the GEs of this world. Many of these companies spent the past two years refining their approach and poaching top engineers and designers from existing drone companies .

These newcomers are poised to enter the market in 2018, and when they do, the enormous resources that these corporations can bring to bear, and economies of scale, will make the current market look tiny.

The Bionic Bird, a bird-shaped drone.

We should treat this as good news. Despite some of the alarming applications of drone technology, it has plenty of positive uses. Bomb detection and disposal are much safer with drones and have saved many lives. Disaster relief work has improved in the intervening six years as emergency supplies are now routinely delivered by drone to places that were unreachable.

Movies and television have also changed as a result of drone cinematography: *Skyfall*, the *Wolf of Wall Street*, the Harry Potter films, and *Game of Thrones* all made extensive use of drone filming – this too will become routine. Delivery companies will habitually use drones as postmen. And lastly, archaeologists have started using drones in zone mapping and observation. We all know the legend of the First Emperor's Tomb in Shaanxi province: allegedly, archaeologists are terrified to excavate the enormous underground mausoleum for fear that they will die when the crossbow traps and rivers of mercury are activated. This year, they might send in a drone. ■ http://www.scmp.com/week-asia/business/article/2124113/how-vietnams-answer-whatsapp-zalo-began-hack

Mind-Controlled, Rideable, and Emergency Drones: My Top 5 Favorite Stories of 2017 MARCO MARGARITOFF DECEMBER 30, 2017

Let's take a look back at 2017, and my top five favorite stories of the year.

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

5. AK-47 Machine Gun Maker Kalashnikov Developed a Rideable Drone

While Kalashnikov's eight-rotor drone can't be purchased, let alone legally used in public, it's still quite the feat of engineering to behold. The simple fact that we're officially at a stage where producing a flying, manned vehicle is utterly feasible is enough to warrant a slot in my favorite news items of the year.

4. Should We Let Police Use Drones Post Emergencies Such as the Las Vegas Shooting?

Drones are becoming an increasingly useful tool in law enforcement. How can we do better? I think that question, alone, deserves a prominent spot here. As a runner-up, I think the Los Angeles Police Department's victory in garnering itself a one-year period of legal drone implementation in law enforcement deserves to be part of the conversation.

3. Drone Helps Find Ancient Temple Remnants in Israel

UAVs have become a highly effective tool for archaeologists.

It's not just that we've discovered a new structure that had remained hidden for thousands of years, which, alone, is stupefyingly cool. Who knows how many temple sites and historically significant remnants will be spotted by unmanned aerial vehicles moving forward?

1. Mind-Controlled Drone Fleets Are Coming, Researcher Says

Mind-controlled drones are coming.

Perhaps I knew that this would be my favorite piece of the year as soon as I finished writing it. Perhaps the title alone, sumptuous in its cyberpunk and science-fiction constitution, had immediately won me over that day. http://www.thedrive.com/aerial/16950/my-top-5-favorite-stories-of-2017

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

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UAV Localization of Power Line Ultraviolet Corona Discharge

Scientists at NASA Langley Research Center have developed a novel system that uses an ultra-violet (UV) camera to detect, inspect, and analyze a corona discharge. This discharge signifies a power line insulation fault, making the technology ideal for use in power line insulation inspections.

When coupled to a drone, the technology offers the ability to remotely monitor power lines in a cost effective way. Adding UV camera technology to drones equipped with GPS results in precise, economical surveys. The UV detection is preferable to infrared (IR) systems which are prone to greater interference from the nearby thermal environment. UV detection offers images that isolate the location of the corona discharge with far greater precision than IR images can. Libraries of typical UV images of corona discharges by insulators and conductors can be added to the firmware to provide additional inspection capabilities. While developed for power transmission line inspection and fault detection, it could be adapted for electric rail and trolley applications or wildfire detection and location. NASA is seeking to license this technology commercially in the United States.
http://bids.findrfp.com/service/viewRFP.aspx?id=E38C6FA5887243BF99BB25D464CC676A&g=f9beff31e9e14da598483a5b62d53320

Northrop Gets $255M Contract Modification for Lot 3 MQ-4C Triton UAS Production Nichols Martin December 29, 2017 Contract Awards

Northrop Grumman has received a four-year, $255.3 million modification under a U.S. Navy contract to produce a third batch of *MQ-4C Triton* unmanned aircraft systems.

The company will provide three low-rate initial production MQ-4Cs to the service branch under the modification, the Defense Departmentsaid Thursday. DoD added that Northrop conduct trade studies and provide tooling support for the Navy's Persistent Maritime Unmanned Aircraft Systems Program Office.

Northrop will perform work through December 2021 at various locations in California, Indiana, Maryland, North Dakota, Mississippi, Texas, Utah, West Virginia, Quebec and various locations within the U.S. https://www.govconwire.com/2017/12/northrop-gets-255m-contract-modification-for-lot-3-mq-4c-triton-uas-production/

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

Boeing unveils a drone capable of landing on an aircraft carrier, as Navy competition heats up Christian Davenport Washington Post

Boeing recently offered a first glimpse of its newest military aircraft, a large, stingray-shaped drone it hopes will win an intense Navy competition to build an uncrewed aircraft capable of landing on an aircraft carrier.

Drones have been a vital part of the Pentagon's arsenal for years, but the competition for a Navy carrier-based version that can refuel jet fighters in midair would mark a significant advancement in the technology.

In addition to Boeing, two of the Pentagon's top suppliers, General Atomics and Lockheed Martin, are also vying for a contract to build as many as 76 of the vehicles that would become operational in the mid 2020s. http://www.chicagotribune.com/business/ct-biz-boeing-mq-25-drone-20171229-story.html

Swedish company to acquire cubesat manufacturer Clyde Space Jeff Foust — December 23, 2017

Craig Clark, Clyde Space founder and chief executive, said the sale of his company to ÅAC Microtec will help the company take a larger share of the growing smallsat industry.

SANTA FE, N.M. — Swedish space company ÅAC Microtec announced Dec. 22 it plans to acquire Scottish cubesat manufacturer Clyde Space, creating what the companies believe will be a dominant force in a growing sector of the industry.

The acquisition will create a company with more than 100 employees and a combined $7 million in revenue in the first three quarters of 2017. However, the firms have expectations of significant growth in the next few years given growing demand for cubesats and other small satellites, particularly though proposed communications and imaging constellations. http://spacenews.com/swedish-company-to-acquire-cubesat-manufacturer-clyde-space/

UTM: Opening Up the Airspace for Long-Distance Flights RENEE KNIGHT

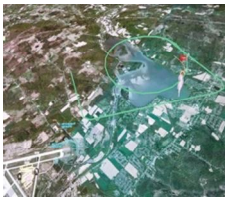
For unmanned aircraft systems to realize their full potential commercially, they must be able to undertake missions beyond the visual line of sight (BVLOS) of their operators. There is, however, a lot of work to be done before BVLOS

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

flights can become routine. Drones, whether they're flying within the operator's line of sight or beyond it, must be safely integrated into the national airspace system so they can operate without creating greater risks for manned aircraft—and that's where unmanned traffic management (UTM) technology comes in.

NASA, drone manufacturers and the test sites designated by the Federal Aviation Administration are focusing on developing UTM technology to enable safe integration of low-altitude UAS operations. The envisioned system helps with mission planning and flight de-confliction up front, and sends notifications to alert pilots to any problems, such as intruders or their system going out of the designated area, while they're in flight.

In September, the NUAIR Alliance launched Phase 1 of its 50-mile UTM corridor that connects two New York state airports between Rome and Syracuse. The first five miles of the corridor are already operational, with construction on the full network of sensors expected to begin in 2018.



During a demonstration to officially activate the corridor, which for now is a loop around the Griffiss International Airport, ground-based sensors and radars from Gryphon Sensors were used to detect and track two aircraft—one manned and one not. Air traffic managers were able to keep the systems a safe distance from each other, demonstrating what the technology can do and how different sensors and systems can be tested.
http://insideunmannedsystems.com/utm-opening-airspace-long-distance-flights/

Sky Taxis: How To Make Them A Reality TOM RISEN | JANUARY 2018

Inspired by consumer drones and Uber's 2016 announcement that it aims to transport passengers in self-piloting aircraft, a cast of competing startups and established players are in discussion with NASA and the FAA about how to shepherd this proposed new class of aircraft into service. Hurdles abound, from social acceptance to safety certifications.

Aurora is developing its electric vertical takeoff and landing aircraft in a partnership with Uber. Here the unmanned subscale version makes its first test flight, in April.

If things go as designers hope, commuters of the future will be whisked safely and affordably over highways and railways, likely in propeller-driven, electric-powered aircraft steered by autonomous software.

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

"The interest in drones has certainly made people realize this is possible," says Rimanelli, who last year founded AirSpaceX, a 10-person air mobility company near Detroit. Rimanelli's conceptual vehicle, a tilt-wing propeller aircraft called MOBi, must vie against at least 12 other designs in the nascent market, according to a list of new vertical flight concepts assembled by the American Helicopter Society. One is Vahana, a tandem tilt-wing full-scale demonstrator made by Airbus' Silicon Valley arm, A3 [pronounced "A cubed"]. The company plans to fly the aircraft at its site in Pendleton, Oregon, in 2018. Then there is the eight-propeller aircraft conceived by Uber's partner, Aurora Flight Sciences, now a Boeing subsidiary. Aurora flew a subscale version of the craft, which has not yet been named, in April at an airfield in California.

It is early days for those pioneering this new breed of craft. While NASA has become more involved with drone makers in recent years, this time the agency wants to be proactive. https://aerospaceamerica.aiaa.org/features/sky-taxis-how-to-make-them-a-reality/

Drones in 2018: Thought Leaders Make Predictions

Miriam McNabbon: January 02, 2018

2017 was a big year for drones: the industry saw unprecedented growth, progress in regulations, and new uses and technologies almost every week. With 2018 upon us, DRONELIFE asked three industry thought leaders for their predictions about what the next year will bring – and added some of our own.

Amit Ganjoo, Founder and CEO of ANRA Technologies and a technologist with deep experience in aviation and drones says that the next step for the industry is clear. "Machine Learning and AI is the next focus for the industry," says Ganjoo. "It's all about how we process data."

"As more large companies put drones to work, we can expect to see a greater need for automated flight, workflows, and analysis," says DroneDeploy. Jono Millin, Chief Product Officer at DroneDeploy, sees flight changing: "With improvements to flight automation, a drone will be able to evaluate its environment—enabling smarter in-flight decisions and adaptive flight planning in challenging environments."

Leading drone industry analyst Colin Snow is an expert in identifying and quantifying trends as they occur in the industry. Technical issues like endurance, perfect AI, management of large data sets, and information accuracy still need to be improved. "Basic public concerns still exist about drone safety, security, privacy, and their public nuisance," Snow points out. As collaborative regulatory efforts continue with manufacturers and government agencies more safety features will be built in to systems.

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

Commercial markets are also shifting as more companies like Airobotics in Israel and now Boston-based American Robotics develop fully automated systems that can fly well-defined missions repeatedly, reliably, and without pilot intervention. The move towards full automation will push adoption into new verticals, and more of the work will move in-house as drone programs become more about the data use and less about the actual flight and data acquisition.

Progress with Unmanned Traffic Management (UTM) solutions and drone integration will also help boost the commercial market. Integration into air traffic control systems will be as significant as Part 107 in moving the industry forward. https://dronelife.com/2018/01/02/drones-2018-thought-leaders-predict-new-trends/

NV Energy Adopts UAS Technology for Utility Operations 31 Dec 2017 | Author: Caroline Rees

NV Energy has announced that it has partnered with the FAA-designated Nevada UAS Test Site, managed by the Nevada Institute for Autonomous Systems (NIAS), and commercial industry specialists in the discovery process of integrating unmanned aircraft systems (UAS) into utility operations. NV Energy has conducted three test flights over company equipment to help identify equipment anomalies and make repairs.

To advance the use of rapidly changing UAS technology, NV Energy has been working with NIAS, AviSight, and other stakeholders on the process for part 107 waiver development. The main objective of this collaboration has been to work with the Federal Aviation Administration (FAA) to discover the requirements for developing a beyond visual line of sight (BVLOS) approval path forward to inspect utility infrastructure.

NV Energy's next test flight toward this initiative will take place in central Nevada, and will incorporate the use of a new ground control system that will ultimately be certified to fly drones, collect data, provide near real-time distribution in any environment and ensure that NV Energy has the safest flight operations technology can provide for BVLOS operations. The objective of this inspection is to use a Pulse Aerospace Vapor 55 paired with a Riegl Vux 1 LiDAR to inspect approximately 41 miles of line.
http://www.unmannedsystemstechnology.com/2017/12/nv-energy-adopts-uas-technology-utility-operations/?utm_source=Unmanned+Systems+Technology+Newsletter&utm_campaign=6e632676a4-eBrief_2018_Jan_2&utm_medium=email&utm_term=0_6fc3c01e8d-6e632676a4-119747501

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Hybrid Drone Sets Flight Endurance Record 28 Dec 2017 | Author: Caroline Rees

Quaternium, a developer of long-endurance multirotor unmanned aerial vehicles (UAVs), has announced that it has set a new world record of endurance with a multirotor drone, accomplishing a 4 hour 40-minute flight (280 minutes) with the company's HYBRiX.20 quadcopter. Quaternium claims that this flight time beats any former demonstration ever made with an electric, hybrid or hydrogen multicopter, including the previous record of 4 hours 34 minutes set by Skyfront.

The improvement over current multirotor drones, most of which can fly for approximately 25 minutes, is due to the development of a hybrid electric-fuel power system with a small combustion engine that keeps an electric battery charged during the entire flight. This technology, inspired by the automotive sector, has earned the company the recognition of the Association for Unmanned Vehicle Systems International (AUVSI) as one of the 16 most innovative startups worldwide in the drone sector in 2017.
http://www.unmannedsystemstechnology.com/2017/12/hybrid-drone-sets-flight-endurance-record/?utm_source=Unmanned+Systems+Technology+Newsletter&utm_campaign=6e632676a4-eBrief_2018_Jan_2&utm_medium=email&utm_term=0_6fc3c01e8d-6e632676a4-119747501

3Jan18

Sagetech Transponder Enables UAS Operations in Civil Airspace 24 Dec 2017 | Caroline Rees

Sagetech Corporation has announced that it has demonstrated the safe flight of a small Unmanned Aircraft System (UAS) in controlled airspace using the same technology that helps maintain manned flight safety.

A PAE ISR Resolute Eagle UAS, equipped with a Sagetech XPC-TR-50 Mode C transponder, successfully completed a mission in civil airspace at the Pan-Pacific UAS Test Range located at Pendleton Airport in Oregon while operating under an FAA Certificate of Waiver or Authorization (COA).

Resolute Eagle is a fixed wing tactical UAS that is designed for use in civil or military airspace. Without a transponder, the aircraft's small size makes it virtually invisible to Air Traffic Control (ATC). Sagetech's military-certified XP transponder eliminates this issue, allowing the Resolute Eagle unmanned airplane to operate safely while sharing airspace with manned aircraft.

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

Transponders allow these aircraft to integrate seamlessly with existing ATC radar systems. http://www.unmannedsystemstechnology.com/2017/12/sagetech-transponder-enables-uas-operations-civil-airspace/?utm_source=Unmanned+Systems+Technology+Newsletter&utm_campaign=6e632676a4-eBrief_2018_Jan_2&utm_medium=email&utm_term=0_6fc3c01e8d-6e632676a4-119747501

Drone Delivery Canada Achieves Compliant Status for Cargo Delivery Drone 29 Dec 2017 | Caroline Rees

Drone Delivery Canada (DDC) has announced that Transport Canada has accepted the company's Declaration of Compliance for the X1000 Sparrow cargo delivery drone. This unmanned aircraft system (UAS) is now compliant with the Transport Canada UAS standard, and is the first cargo delivery drone of its kind to be accepted under the Transport Canada, Compliant UAS program.

"Achieving Compliant UAV Status is the first of three very critical steps in DDC achieving its Compliant Operator Status Certificate. We anticipate obtaining the balance of the approvals in early Q1 2018," commented Tony Di Benedetto, CEO. Achieving Compliant UAS Operator status is also the first requirement for being permitted to conduct Beyond Visual Line-of-Sight (BVLOS) operations. This achievement will allow DDC to conduct safe and effective drone deliveries in Canada. http://www.unmannedsystemstechnology.com/2017/12/drone-delivery-canada-achieves-compliant-status-cargo-delivery-drone/?utm_source=Unmanned+Systems+Technology+Newsletter&utm_campaign=6e632676a4-eBrief_2018_Jan_2&utm_medium=email&utm_term=0_6fc3c01e8d-6e632676a4-119747501

13 drones in four days: How drug smugglers are using technology to beat Border Patrol Stephen Dinan - *The Washington Times - January 3, 2018*

Mexican cartels are aware of U.S. limitations, making them choice method for smuggling, agents said.

A U.S. Customs and Border Protection Air and Marine agent pears out of the open door of a helicopter during a patrol flight near the Texas-Mexico border.

Border Patrol agents are increasingly worried about the threat from drug-cartel-flown drones, after agents spotted 13 drones suspected of carrying drugs across one section of the U.S.-Mexico border in just one four-day period in November.

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

Cartels are aware that the U.S. lacks the ability to detect the drones, much less to interdict them, making them a choice method for smuggling high-dollar hard drugs into the country, agents said.

They said the fact that they even spotted the 13 drones was serendipitous and only hints at the scope of the real problem. “We’re seeing an uptick. We flat-out just don’t have the technology to detect these,” said Brandon Judd, an agent and president of the National Border Patrol Council. “The number is just astronomical.”
https://www.washingtontimes.com/news/2018/jan/2/drones-fly-drugs-us-no-border-patrol-detection-tec/

Drones have potential to do far more good than harm JOSHUA ZIERING, OPINION CONTRIBUTOR — 01/02/18

Commercial drones have the potential to save lives not just by helping rescue lost people but by keeping people off of roofs, off the sides of bridges or from dangling precariously while they do inspections. The list is long and varied.

The commercial drone of today doesn’t have much in common with its militarized brethren. Like so many technologies that have come before it, the use cases have matured past military applications. Global Positioning Systems (GPS) used to inform missiles where to go, now they tell your Uber where to go.

To its credit, the Federal Aviation Administration (FAA) has gracefully played a very difficult hand. The Unmanned Aircraft Systems (UAS) Integration Office is working diligently to create common-sense legislation that preserves the already stellar safety record of the national airspace in America, while allowing this new technology to begin to thrive.

The drone industry has taken the lessons of the tech industry, the aviation industry and the media industry to start self-regulating. Behind the scenes, drone companies are already working on solutions to things like identification and tracking because we realize that making it easy to discern between the good guys and the bad guys is going to be of paramount importance in the future.

The net effect will be safer and more efficient work for millions of people. Let’s not throw the baby out with the bathwater and legislate away the opportunity of a generation.
http://thehill.com/opinion/technology/367073-drones-have-potential-to-do-far-more-good-than-harm

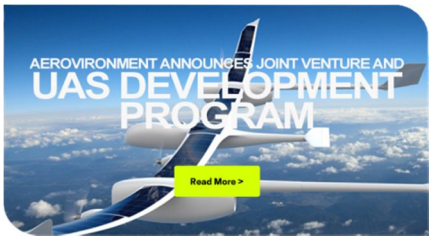
New Solar-Cell Wing Will Boost AeroVironment's Puma Drone Jason Reaganon: January 01, 2018

A partnership between a leading solar-cell provider and Johns Hopkins University could give a sunny forecast to longer drone battery life.

Johns Hopkins University Applied Physics Laboratory recently awarded a contract to SolAero Technologies Corp. – maker of solar cells and aerospace-applied composite structural products. The partnership will develop an integrated solar-cell wing rig for AeroVironment's Puma fixed-wing drone with plans to test the new product later this year.

The solar wing – composed of high-efficiency solar cells integrated onto a ruggedized composite structure – is virtually identical to a normal wing on the Puma. However, using the power of the sun, the new wing will extend flight time and maximize payload.

The solar wing is the brainchild of both SolAero and the company's subsidiary, Alliance Spacesystems. During recent flight tests at Yuma Proving Ground earlier this year, SolAero officials say the new wing "performed flawlessly and demonstrated power generation equal to engineering estimates." https://dronelife.com/2018/01/01/new-solar-cell-wing-will-boost-aerovironments-puma-drone/



AeroVironment Announces Joint Venture and Solar High-Altitude Long-Endurance Unmanned Aircraft System Development Program January 03, 2018

MONROVIA, Calif.--(BUSINESS WIRE)--AeroVironment, Inc. (NASDAQ: AVAV), a global leader in unmanned aircraft systems (UAS) for both defense and commercial applications, today announced the formation of a joint venture to develop solar-powered high-altitude long-endurance, or HALE, UAS for commercial operations. This category of UAS is also referred to as high-altitude pseudo-satellites, or HAPS. The joint venture will fund the development program up to a net maximum value of $65,011,481.

"This is a historic moment for AeroVironment. For many years, we have fully understood the incredible value high-altitude, long-endurance unmanned aircraft platforms could deliver to countless organizations and millions of people around the world through remote sensing and last mile, next generation IoT connectivity"

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

The joint venture, HAPSMobile, Inc., is a Japanese corporation that is 95 percent funded and owned by Japan-based telecommunications operator SoftBank Corp. and 5 percent funded and owned by AeroVironment, Inc. AeroVironment is committed to contribute $5 million in capital for its 5 percent ownership of the joint venture, and has an option to increase its ownership stake in HAPSMobile up to 19 percent at the same cost basis as its initial 5 percent purchase.

"This is a historic moment for AeroVironment. For many years, we have fully understood the incredible value high-altitude, long-endurance unmanned aircraft platforms could deliver to countless organizations and millions of people around the world through remote sensing and last mile, next generation IoT connectivity," said Wahid Nawabi, AeroVironment chief executive officer. "We were searching for the right strategic partner to pursue this very large global opportunity with us. Now we believe we are extremely well-positioned to build on the decades of successful development we have performed to translate our solar UAS innovations into long-term value through HAPSMobile, Inc."
https://www.businesswire.com/news/home/20180103005647/en/AeroVironment-Announces-Joint-Venture-Solar-High-Altitude-Long-Endurance

4Jan18

Workhorse SureFly passenger drone gets FAA test-flight certification Fleet Owner Staff | Jan 03, 2018

FAA grants Workhorse permission to test hybrid helicopter during CES in Las Vegas next week. SureFly, the world's first electric hybrid helicopter, features a drone-like octocopter design, a two-person, 400-pound payload capacity and a range of about 70 miles.

Workhorse Group has received an Experimental Airworthiness Certificate from the Federal Aviation Administration (FAA) that will allow the company to conduct test flights of its SureFly electric hybrid helicopter. The first test flight is scheduled for noon local time in Las Vegas on Monday, Jan. 8, before the start of the 2018 Consumer Electronic Show (CES).

Last week, Workhorse announced that it intends to spin off its SureFly business into a separate publicly traded company called SureFly Inc. http://www.fleetowner.com/technology/workhorse-surefly-passenger-drone-gets-faa-test-flight-certification

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2,800 interested parties apply for UAS Integration Pilot Program

Patrick C. Miller | January 03, 2018

The Federal Aviation Administration says commercial drone companies make up the majority of more than 2,800 interested party applications to the U.S. Department of Transportation's (DOT) UAS Integration Pilot Program announced in October 2017.

The FAA reported that energy companies, law enforcement agencies, insurance providers and software firms have also submitted applications. State, local and tribal government bodies can participate as lead applicants in the program and serve as the primary point of contact with the FAA.

The next program deadline is Thursday, Jan. 4, when lead applicants must submit additional information to the FAA. After evaluating all the applications, DOT will select a minimum of five partnerships. By May 7, the lead applicants and the FAA will enter into a memorandum of agreement.

President Donald Trump established the program to speed up the integration of UAS into the national airspace system by creating partnerships between government bodies, UAS operators and other private stakeholders. The goal is to conduct advanced UAS operations safely and with public support in affected communities with oversight by the FAA.

According to DOT, the program will help tackle the most significant challenges in integrating drones into the national airspace while reducing risks to public safety and security. The program is designed to provide greater regulatory certainty and stability to local governments and communities, UAS owners, and operators who are accepted into the program.
http://www.uasmagazine.com/articles/1801/2-800-interested-parties-apply-for-uas-integration-pilot-program

DroneGun a countermeasure to drone terror attacks Patrick C. Miller | January 03, 2018

The DroneGun Mark II is safe for people, but it isn't safe for drones being operated illegally or as weapons of terror.

The DroneGun, which looks like a weapon from a sci-fi movie, is made by DroneShield, a company founded four years ago in the U.S. that now has offices in Virginia and Australia. With terrorist organizations making greater use of drones as weapons, Oleg Vornik, CEO of DroneShield, said government security agencies and militaries around the world see DroneGun as an effective countermeasure to the threat.

The DroneGun can either force a drone to return to is operator or safely land. It does this by jamming the GPS signal that tells the drone where it is or by jamming the radio signal between the operator and the drone. When the radio signal is lost, the drone automatically returns to the operator. When both the GPS and radio signals are lost, the drone automatically goes into safe landing mode.

As Vornik explains, this is known as a 'soft kill' because the drone is simply rendered inoperable. He said it's the preferred method of dealing with weaponized drones because shooting them down is not only difficult, but can also lead to collateral damage if the drone crashes or explodes. http://www.uasmagazine.com/articles/1802/dronegun-a-countermeasure-to-drone-terror-attacks

Agricultural Drone Provider Inks Major Deal with John Deere Jason Reagan January 04, 2018

Agribotix, a Colorado-based company specializing in "drone-enabled agricultural intelligence," inked a deal last month to integrate its UAS platform with John Deere.

The company will deploy its FarmLens ag-drone platform to empower John Deere dealers to offer customers enhanced precision-ag tools – a move that will allow farmers to optimize crop yield and save money.

"Agribotix is the resource needed for expanding and excelling in precision farming," 4Rivers Equipment precision ag expert Andy Hansen said of the system. A key John Deere dealer/customer, 4Rivers deploys ag drones to survey fields, analyze crop health and process data with FarmLens.

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

"Gathering data from agricultural drones can be done any day of the year and with the rapid delivery of results, a precision plan can be adjusted efficiently and effectively, allowing timely decisions to be made about fertilizer application, seeding rates and water management," Hansen added. https://dronelife.com/2018/01/04/agricultural-drone-provider-inks-major-deal-john-deere/

5Jan18

Boeing's Aurora Subsidiary to Continue Orion UAS Development for Air Force

Nichols Martinon: January 04, 2018 C4ISR, News

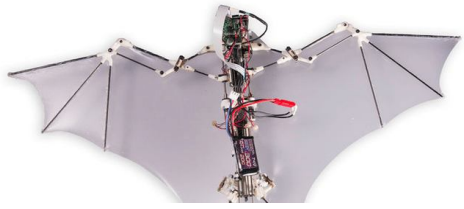
Aurora Flight Sciences has received a potential $48 million contract to continue developing twin-engine unmanned aircraft system for the U.S. Air Force.

The Boeing subsidiary said Wednesday it will build an *Orion UAS* variant designed to perform in any location worldwide. Aurora will produce the system at its facilities in Mississippi and Virginia.

Orion is designed to operate for 100 consecutive hours and carry payload of more than 1,000 pounds. Development of the medium-altitude, long-endurance UAS began in 2006, followed by the platform's maiden flight in 2013. In 2014, the Orion broke the UAS world endurance record with 80 flight-hours, two minutes and 52 seconds. http://blog.executivebiz.com/2018/01/boeings-aurora-subsidiary-to-continue-orion-uas-development-for-air-force/

Pentagon Seeks Laser-Powered Bat Drones. Really.

PATRICK TUCKER TECHNOLOGY EDITOR JANUARY 4, 2018



A new contest seeks flight systems inspired by Mother Nature and powered by directed-energy beams. Flying robots that move like living animals, are crafted of next-generation materials and draw their power not from batteries but energy beamed from nearby aircraft.

On Wednesday, the Defense Enterprise Science Initiative, or DESI, announced a competition for basic science grants to build "new paradigms for autonomous flight, with a focus on highly-maneuverable platforms and algorithms for flight control and decision making." An

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accompanying Broad Agency Announcement gets more specific: basically, they're looking for bat-like drones that can be powered with directed-energy beams.

"The biological study of agile organisms such as bats and flying insects has yielded new insights into complex flight kinematics of systems with a large number of degrees of freedom, and the use of multi-functional flight surface materials," the announcement reads. The Air Force believes that more and more naturalistic design — coupled with more powerful and smaller sensors to form a better picture of the outside world — should yield "significant improvements in maneuverability, survivability and stealth over traditional quadcopter or fixed wing designs."
http://www.defenseone.com/technology/2018/01/pentagon-seeks-laser-powered-bat-drones/144964/

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