UAS and SmallSat Weekly News

Contents

14Apr18

Proposed French Drone Regulation Would Require Remote Identification MARCO MARGARITOFF APRIL 12, 2018

The French Federation of Model Airplanes (Fédération Française d'Aéromodélisme) has updated a 2015 proposal for hobby drones regulations.

The suggested requirements revolve around authorities being able to remotely identify a drone and having an embedded signaling light. Any drone weighing more than 1.76 pounds would have to include certain components related to remote identification and visibility. Most importantly, the proposal suggests each UAV include an electronic identification system, which has to be able to provide authorities with the ability identify a UAV while in flight, remotely.

Flying a UAV not fitted with the required hardware and software could cost you 750 euros. Additionally, relaying an electronic drone identification number not assigned to the drone in operation would be punishable with a maximum fine of 1,500 euros for first-time offenders, and as much as 3,500 euros for subsequent violations.

These regulations could reportedly turn into reality as early as July 1 of this year. Fortunately, fines would graciously not be issued until January 1, 2019, in order to allow manufacturers some much-needed acclimation. http://www.thedrive.com/tech/20063/proposed-french-drone-regulation-would-require-remote-identification

16Apr18

See Straight Through Walls by Augmenting Your Eyeballs With Drones

A drone combined with a HoloLens can simulate X-ray vision while offering easy and intuitive control Evan Ackerman 12 Apr 2018

Researchers from Graz University of Technology, in Styria, Austria, led by Okan Erat, want to change the way we interface with drones, using augmented reality to turn them from complicated flying robots into remote cameras that an untrained user can easily control. Through a HoloLens—Microsoft's mixed reality head-mounted display—a drone can enable a sort of X-ray vision, allowing you to see reality head-mounted display—a drone can enable a sort of X-ray vision, allowing you to see

straight through walls and making controlling the drone as easy as grabbing a virtual drone and putting it exactly where you want it to be.

HoloLens works by projecting images into your field of vision. It carefully tracks where your head is pointing, and it can overlay a video feed from a drone on the other side of an opaque wall on top of what you're looking at to make it appear as though the wall is transparent. Depending on what kind of camera the drone is equipped with, it can only see a limited field of view, so if you turn your head to look in a different direction (or move around), the drone will reposition itself to give you the view that you want.
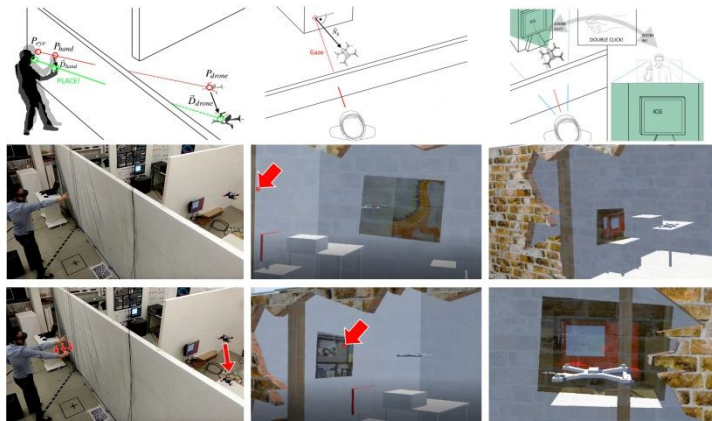
The researchers created a control interface that lets you steer the drone using pick-and-place gestures [three images on the left]; steer the drone by looking in different directions [middle]; and get a close-up view by double clicking on a virtual object [right].

While the drone moves autonomously for most of the looking around, it's easy to reposition it manually, again taking advantage of the augmented reality of the system. https://spectrum.ieee.org/automaton/robotics/drones/see-straight-through-walls-by-augmenting-your-eyeballs-with-drones

DARPA Gremlins Drone Launched or Recovered From a C-130 JOSEPH TREVITHICK
APRIL 11, 2018

A brief clip of an official video from the Defense Advanced Research Projects Agency has appeared online, showing what looks to be a C-130 Hercules-type aircraft deploying or recovering a prototype unmanned system as part of the Gremlins drone swarm program.

Gremlins, which first began in August 2015, envisions a cheap, short-life drone swarm that one or more aircraft can release in flight and another set of planes can then retrieve in mid-air after a mission. The basic concept of operations envisions a

C-130-type aircraft as well as combat aircraft, such as fighter jets and bombers, releasing the swarm of Gremlins at a stand-off distance from enemy defenses.

DARPA says the primary tasks it envisions for Gremlins, at least at present, are intelligence, surveillance, and reconnaissance and as a platform for other "non-kinetic" payloads, which could include electronic warfare systems. Swarms offer significant potential as distributed sensor nodes and as a means of overwhelming enemy integrated air defenses ahead of a strike. http://www.thedrive.com/the-war-zone/20058/this-is-our-first-glimpse-of-a-darpa-gremlins-drone-being-launched-or-recovered-from-a-c-130

Drone surveys Caloosahatchee River wading bird rookeries for Audubon, estuary program Laura Ruane, LRUANE@NEWS-PRESS April 13, 2018

Ecologist Church Roberts is piloting a drone to survey wading bird nests and breeding pairs on Lenore Island in the Caloosahatchee River, near Fort Myers, Florida.

"We're looking for trendlines," said Pete Quasius, the Lee-County-based Audubon lobbyist who's ferrying Roberts and the drone to the rookery islands. He's partnering with Audubon of the Western Everglades, which is providing a boat and a skipper, free of charge.

"Surveying nesting activity is important not only for protecting the birds and their habitat but also for the fish and waters they rely upon," said Jennifer Hecker, CHNEP executive director.

Drones provide a better view than a land- or boat-based observer. They can capture photos and videos for later analysis.

Unlike airplanes, drones are relatively small and quiet, reducing the risk of spooking the birds. https://www.news-press.com/story/news/2018/04/13/drone-surveys-caloosahatchee-river-wading-bird-rookeries-audubon-estuary-program/482200002/

Drones Helping Stockton Cops Catch Violent Crooks, Seize Guns Jennifer McGraw
April 12, 2018

STOCKTON (CBS13) – An attempted murder suspect and a few firearms are off the streets thanks to a single police drone. The eyes in the sky flew over Taft Park Tuesday evening catching an attempted homicide suspect. The 16-year-old is suspected of gunning down a man on Bianchi Road; now he's behind bars.

With the aerial views, investigators believe they can better search crimes scenes and catch criminals. "Also if they break out of a perimeter and take off, we'll be able to stay with them, call in resources," Ridenour said.

But that's not all police were able to see from above.

"Captured footage of another person in the same area during the same time going to his vehicle putting a handgun in his waistband," Calderon said. That led to the arrest of 22-year-old Terry Emerson. The visual gave police cause to conduct a traffic stop, which revealed three handguns. "Anytime we get guns off the street it's a very significant and successful case," she added. http://sacramento.cbslocal.com/2018/04/12/stockton-police-drone/

Medical delivery drones may soon be helping rural Americans April 16, 2018 Feilidh Dwyer

A drone company specializing in medical deliveries and producing amazing results in Rwanda could soon be bringing their services to the United States.

The company was founded in 2014 with financial backing from Google and others and have thus far completed more than 4000 deliveries of lifesaving blood-packs and medical supplies to geographically isolated areas of Rwanda. Their network of drones and delivery centers enables isolated medical facilities in the poor African nation to receive supplies that would have formerly taken days to arrive in just half an hour.

A medical staff member in a remote area texts Zipline, specifying the supplies they need. Zipline's distribution center staff prepares and packs supplies up to 4 lbs into the drone, and the mission is launched. Once the craft is guided to its destination, the package is dropped by parachute to within a few meters of an agreed drop-off point. The whole process from ordering to delivery occurs within 30 minutes.

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

In giant rural states with small, dispersed populations, deliveries by car or truck are not always practical or economical. Drones represent a cost-effective way of making sure these small medical centers are kept fully-stocked with the supplies they need.

Zipline is currently awaiting Federal Aviation Authority (FAA) approval for the go-ahead. If all goes according to plan, they will begin talks with various states and start flying before year's end. https://www.wetalkuav.com/medical-delivery-drones-could-help-rural-americans/

University of Sydney to develop next-gen Small Unmanned Aerial System to enhance defence capability Nicky Lung 16 APR 2018

Aerospace engineers from the University of Sydney are working to develop a next-generation Small Unmanned Aerial System for use by Australian soldiers.

The Australian Army recently announced it had partnered with the Defence Innovation Hub to award three innovation contracts totalling A$783,000 to Australian industry and research organisations to develop the SUAS.

The team from the University of Sydney's School of Aerospace, Mechanical and Mechatronic Engineering (AMME) was awarded A$249,524 to develop a lightweight unmanned aerial system that combines vertical take-off capabilities with horizontal fixed wing flight for extended speed and endurance. The system will be supported by a suite of communication, control and sensor payloads.

In a statement, UAS Program Manager with the Australian Army, Lt Col Keirin Joyce, highlighted the vigour of the selection process. "Industry provided us 47 submissions that we shortlisted down to 15 collaborating proposals and we have selected three to work with us on the Small UAS of the Future." https://www.opengovasia.com/articles/university-of-sydney-to-develop-next-gen-small-unmanned-aerial-system-to-enhance-defence-capability

Volocopter Starts Serial Production MARY GRADY

DG Flugzeugbau, a sailplane manufacturer in Germany, said recently it got an order to "manufacture a large number of Volocopters from Volocopter GmbH," but nobody is saying exactly how many a "large number" is. DG Flugzeubau did say at its website that it will be manufacturing the 2X version

of the Volcopter, and noted it will be the first aircraft of its kind to enter serial production. "Thanks to huge investors like the Daimler AG, many engineers and technicians work hard to implement this new technology," says the post at Flugzeubau's website. "Getting this project into the stage of a serial production is the next big step which keeps Volocopter and DG in the market lead."

The Volocopter 2X, an electric-powered, multi-rotor VTOL, can fly autonomously or "be easily operated using a joystick," according to the company website. It aims to be safe, quiet and reliable. It's also the world's first multicopter that has been certified for manned flight. Volocopter flew an unmanned 2X in Dubai last September, which the company said was the "first-ever public flight of an autonomous urban air taxi." The company is working to verity the feasibility and safety of airborne taxis as a means of public transportation.
https://www.avweb.com/eletter/archives/101/4016-full.html?ET=avweb:e4016:2565185a:&st=email#230670

RAI CEO Paul Riemens Launches New Platform Amsterdam City of Drones April 13, 2018

Paul Riemens, CEO of the RAI Amsterdam convention centre, has launched the 'Amsterdam City of Drones' initiative in parallel with this week's Commercial UAV Expo Europe. "RAI Amsterdam aims to be more than an event organiser in this context," says Riemens. "Our goal is to provide a platform for knowledge, contacts and innovation as we aim to make Amsterdam the drone capital of the world." With its focus on education, innovation and technology, the city of Amsterdam is a perfect base to bring all these aspects together."

As the former CEO of the Dutch air traffic control centre, Luchtverkeersleiding Nederland, Riemens has an important personal contribution to make. "Based on my prior experience, I have an understanding of how the use of drones could be regulated. The safety of air travel is a major issue." http://uasweekly.com/2018/04/13/rai-ceo-paul-riemens-launches-new-platform-amsterdam-city-of-drones/?utm_source=newsletter&utm_medium=email&utm_campaign=uasweekly_newsletter_2018_04_16&utm_term=2018-04-16

"Amazon delivery drones could reach nearly 100 million people in five years" –

Ark Invest April 12, 2018 Philip Butterworth-Hayes UAS traffic management news

 Research investment company Ark Invest (https://ark-invest.com/research/delivery-drones) reports that with Federal Aviation Administration approval, Amazon delivery drones "could transport packages to more than 50 million people in roughly 30 minutes.

According to the company: "Amazon says that its drones can deliver packages weighing up to five pounds, accommodating 86% of the products it delivers today…an Amazon-like drone carrying a five-pound package could fly for 31 minutes. New generations of lithium-ion batteries should weigh less, increasing the range for an Amazon-like drone from 10 miles today to 17 miles in 2022."

"In December 2014, Amazon launched Prime Now in New York, offering delivery of its most frequently purchased items in less than an hour. Today, Prime Now is available in many densely populated cities in the US where Amazon has hubs…If it were to launch its drone delivery service from these Prime Now hubs, Amazon could reach roughly 51 million people, or 16% of the U.S. population. With more energy dense batteries, the drones would be able to service nearly 100 million people, or 32% of the population, within the next five years, delivering a package in fewer than 30 minutes for less than one dollar."
http://www.unmannedairspace.info/uncategorized/amazon-delivery-drones-reach-nearly-100-million-people-five-years-ark-invest/

DroneShield C-UAS equipment protects Texas NASCAR event April 12, 2018 Philip

Butterworth-Hayes Counter-UAS systems and policies

The Fort Worth Police Department has confirmed that DroneShield's products were used by the Texas State Department of Public Safety, the Denton County Sheriff, the Fort Worth Police Department, the Texas Forest Service, and the Texas Rangers for the protection of the 2018 Monster Energy NASCAR Cup Series at the Texas Motor Speedway.

 Oleg Vornik, DroneShield's Managing Director and CEO, said, "the NASCAR Cup Series is a high security event, designated code orange by the relevant US federal government agencies.
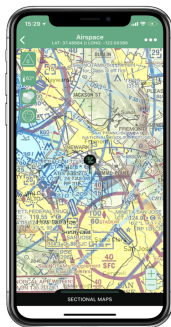
The company has also announced its counter-drone products were used in the XXIII Olympic Winter Games in PyeongChang, South Korea, and multiple units of its DroneGunTM product were used by the Queensland Police during the XXI Commonwealth Games in April 2018. http://www.unmannedairspace.info/counter-uas-systems-and-policies/droneshield-c-uas-equipment-protects-texas-nascar-event/
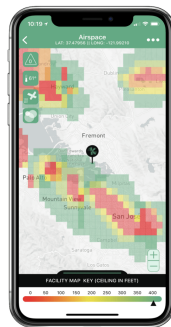
17Apr18

Knowledge Base Presented By Kittyhawk "LAANC In-Depth" April 16, 2018

Pre-LAANC   Full-LAANC

Kittyhawk.io

Aviation is full of acronyms, and there's no better example than LAANC — or Low Altitude Authorization and Notification Capability. LAANC was developed over the last year in collaboration with government and private industry to open the national airspace to drone operators, replacing a ~90-day manual process to receive authorization to fly in controlled airspace, down to seconds via an API.

What LAANC really means for commercial drone operators is a quick and unambiguous method to request flight authorizations in controlled airspace. The FAA has essentially replaced a blackbox method that took months to a precise method that happens immediately. For commercial pilots, the airspace will start to look a lot different.

 The FAA will begin rolling out LAANC to different regions beginning April 30th in the South Central region and culminating in the Central North region in September. LAANC will not be impactful purely through speed. Vast amounts of previously onerous airspace will become accessible across the National Airspace.

We're excited at the opportunity that authorization wait times in seconds instead of months for authorizations will bring to the commercial drone industry. However, once we started analyzing the numbers, it became clear the largest impact isn't speed. It's area. And that's even more exciting. http://uasweekly.com/2018/04/16/knowledge-base-presented-by-kittyhawk-laanc-in-depth/?utm_source=newsletter&utm_medium=email&utm_campaign=uasweekly_newsletter_2018_04_17&utm_term=2018-04-17

Novadem Develops Next-Generation Tethered Drone 17 Apr 2018 Mike Rees

Novadem has developed a second generation of tethered drone, the NXWIRE 2.0, providing the ability to unlock the drone from its cable while it is still airborne, freeing it from all the constraints of a tethered configuration. It is composed of three parts:

- A ground-based power supply that can be connected to a main supply or an auxiliary power unit

- A 50-meter power cable

- An embedded module, taking the place of the battery, which integrates an electromechanical mechanism that unlocks the cable and a reserve of energy allowing around 20 minutes of flight time

It provides long-lasting observation missions and the capability to get closer to the target without ever losing sight of it to support response teams.
http://www.unmannedsystemstechnology.com/2018/04/novadem-develops-next-generation-tethered-drone/?utm_source=Unmanned+Systems+Technology+Newsletter&utm_campaign=5fa50ea241-eBrief_2018_Apr_17&utm_medium=email&utm_term=0_6fc3c01e8d-5fa50ea241-119747501

UAV Helps Facilitate Prosecution of Illegal Moose Poacher Betsy Lillian April 16, 2018

Drone solutions company Draganfly Innovations and Saskatchewan Polytechnic succesfully used an unmanned aerial vehicle to help with a prosecution following a conservation-related crime.

The applied research team used a fixed-wing senseFly eBee UAV to conduct a mapping mission of the area. A total of 150 photographs were taken by the drone and were used to recreate a 3D snapshot of the crime scene. A digitized tool was used to highlight tire and moose tracks; a nearly continuous set of tracks was traced from where the moose was processed to where the vehicle had become stuck in a ditch.

According to Sask Polytech, the ability to tie the case together visually through the use of drone technology was beneficial in solidifying evidence for the prosecution, and it gave a visual story of what happened to the cow moose and calf. https://unmanned-aerial.com/uav-

helps-facilitate-prosecution-of-illegal-moose-poacher?utm_medium=email&utm_source=LNH+04-17-2018&utm_campaign=UAO+Latest+News+Headlines

FlyJacket Lets You Control a Drone With Your Body Evan Ackerman 17Apr2018

EPFL has developed a better system for drone control, taking away the sticks and replacing them with intuitive and comfortable movements of your entire body. It's an upper-body soft exoskeleton called FlyJacket, and with it on, you can pilot a fixed-wing drone by embodying the drone—put your arms out like wings, and pitching or rolling your body will cause the drone to pitch or roll, all while you experience it directly in immersive virtual reality.

Developed at EPFL's Laboratory of Intelligent Systems, led by Professor Dario Floreano, the exosuit doesn't require much in the way of training since it's inherently so intuitive. Sensors in the suit detect body motion, and translate torso pitch (bending forwards and backwards) into drone pitch, and torso roll (bending sideways) into drone roll. Neither of these motions require your arms to be outstretched, or really for your arms to move at all, but it's instinctive for people to hold their arms out when they're pretending to fly, and they're more comfortable with their level of control when they do so. https://spectrum.ieee.org/automaton/robotics/drones/epfl-flyjacket-exosuit-lets-you-control-a-drone-with-your-body

Delivery By Drone Matures In Real-World Testing Apr 13, 2018 Graham Warwick | *Aviation Week & Space Technology*

In a suburb of Canberra, in Australia's Capital Territory, Project Wing's drone delivery system is facing its toughest test yet. The project team wants to find out how well unmanned aircraft systems (UAS) will compete with other modes of home delivery.

Amazon continues testing in the countryside in Cambridge, England, but publicly is talking more about its work on the UAS traffic management (UTM) system required to enable drones of all stripes to make safe and efficient use of low-altitude airspace.

Project Wing is also developing UTM and using its system in Australia. In the U.S., it is one of the first five UAS service suppliers, or USS, selected by the FAA to provide automated approval of requests to fly drones in controlled airspace near airports using the Low-Altitude Authorization and Notification Capability, viewed as the first piece of UTM.

Part of the Alphabet X advanced research arm of Google's parent company, Project Wing conducted its first delivery demonstration in Australia in 2014 to a farm in the Queensland Outback. It returned in October 2017 to begin regular drone deliveries to a semirural community outside Canberra.

"From October to March, we were able to expand our operations from line-of-sight to extended-light-of-sight, with a spotter watching the airspace all the way, to true beyond-visual-line-of-sight [BVLOS]," says James Ryan Burgess, project co-lead. "We were flying over people, and all the routes were on demand."

The trial was conducted with Mexican food chain Guzman y Gomez and pharmacy chain Chemist Warehouse; customers used a smartphone app to order items for delivery. "We were close to 900 customer flights and, of the 300-odd homes, we had 100 people try it, and 89 of those became repeat customers," he says. "It was validation for us that what we are creating really does provide value." http://aviationweek.com/commercial-aviation/delivery-drone-matures-real-world-testing

18Apr18

The Trump administration is poised to make it easier to export drones to partner nations. Christian Clausen/U.S. Air Force
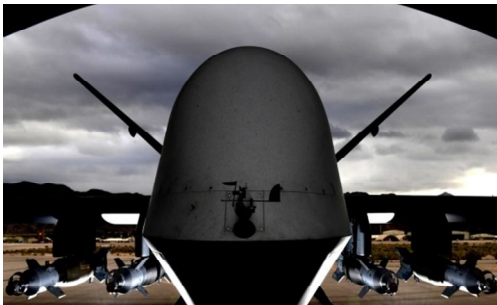
WASHINGTON — The Trump administration this week is expected to announce new guidance on the export of defense equipment, as well as new rules loosening restrictions on drone exports, all as part of a broader push by President Donald Trump to encourage growth in the defense industrial base.

The rules could be made public as early as Wednesday, but sources familiar with the issue cautioned that the schedule has already shifted for announcing these changes several times in the past few months.

The item most likely to attract attention is a change in the rules governing the export of unmanned systems, commonly known as drones. The change would alter a 2015 guidance from the Obama administration governing unmanned system exports, with an eye on making it easier to sell the systems to partners abroad. Such a change has been on the Trump administration's docket going back to August 2017.

https://www.defensenews.com/pentagon/2018/04/17/trumps-new-drone-defense-export-rules-expected-this-week/

AIRLINES BACK CREATION OF GLOBAL DRONE REGISTRY: IATA Reuters .

 MONTREAL/SINGAPORE - The world's airlines are backing the development of a United Nations-led global registry for drones, as a rise in near collisions by unmanned aircraft and commercial jets fuels safety concerns.

The International Air Transport Association backs efforts by the United Nations' aviation agency to develop such a registry, which could also help track the number of incidents involving drones and jets, said Rob Eagles, IATA's director of air traffic management infrastructure. IATA would consider collaborating with the International Civil Aviation Organisation (ICAO) to use the registry for data analysis to improve safety.

ICAO is developing the registry as part of broader efforts to come up with common rules for flying and tracking unmanned aircraft. http://ewn.co.za/2018/04/18/airlines-back-creation-of-global-drone-registry-iata

Xcel Energy Announces a New Milestone for Drone Technology April 18, 2018
Mapping and Surveying | News

 Xcel Energy, a leader in using drone technology to inspect energy infrastructure, will be the first utility in the nation to routinely fly unmanned aircraft beyond the operator's line of sight when it begins surveying transmission lines near Denver, Colorado. The FAA's decision to allow these flights is unprecedented in the utility industry.

Starting this summer, the company will routinely operate drones beyond visual line of the operator's sight within a designated area approximately 20 miles north of Denver International Airport. Licensed pilots will remotely operate a small, unmanned helicopter weighing less than 55 pounds. Xcel Energy will use command-and-control technology to ensure safe operations while it inspects transmission lines.

When the transmission inspections are completed in the Denver area, the company will work with the FAA to extend beyond line-of-sight operations in other states where the company provides electric service. http://uasweekly.com/2018/04/18/xcel-energy-announces-a-new-

milestone-for-drone-
technology/?utm_source=newsletter&utm_medium=email&utm_campaign=uasweekly_newsletter_2
018_04_18&utm_term=2018-04-18

Purdue University Launches New Free Digital Logbook For Drone Users April 17, 2018 News

A Purdue University researcher led development of a free, web-based application that will allow those using unmanned aerial systems (UAS) to easily log their flight-related data.

The UAS User Log is a digital log book available around the world to serve those using UAS, or drones, for research, crop production, spray applications and other activities. The logbook provides options to interactively record the date, time and location of a flight, the make, model and registration information of the device, status of battery charge, type of flight (autonomous or manual), types of sensors used and data collected, safety precautions taken, weather during the flight and other related information.

Dharmendra Saraswat, an associate professor in Purdue's Department of Agricultural & Biological Engineering, led the team that included researchers from the U.S. Department of Agriculture's Agricultural Research Service, Washington State University and Texas A&M University.

"We've lacked a system to provide UAS users in agriculture with a way to record information about their flights, sensors and maintenance issues," Saraswat said. "Thus, creation of a common protocol for UAS operations for various research- and production-related applications is an effort to plug that gap and bring standardization to flight data collection."
http://uasweekly.com/2018/04/17/purdue-university-launches-new-fee-digital-logbook-for-drone-users/?utm_source=newsletter&utm_medium=email&utm_campaign=uasweekly_newsletter_2018_04_18&utm_term=2018-04-18

Aero 2018 Opens: Electric Airplanes Dominate JASON BAKER

As Aero 2018 in Friedrichshafen, Germany is set to open this week with more than 630

exhibitors from 38 countries, electric aircraft and drone technology are expected to dominate the show. The expo will also be well populated with gyrocopters, new light sport aircraft and efficient engine technology.

Not ready for flight yet but on display will be an innovation from Lange Research, the E2, an eye-catching design with no less than six electric motors each driving its own prop. Powered by a fuel cell, the aircraft can be flown manned or unmanned for scientific and surveillance work. It's said to have an endurance of 40 hours and first flights are planned this summer. https://www.avweb.com/eletter/archives/101/4022-full.html?ET=avweb:e4022:2565185a:&st=email#230687

19Apr18

U.S. Spy Satellite Agency To Seek "Tiny Rockets" For Small Sats TOM RISEN|APRIL 18, 2018

COLORADO SPRINGS, Colo. — The U.S. National Reconnaissance Office, known for buying gigantic, "exquisite" spy satellites, is learning to think small for some of its needs.

"We want to explore what the tiny rocket marketplace can provide for us," NRO Director Betty Sapp told an audience here at the Space Symposium on Tuesday. She was referring to the burgeoning marketplace of small launch vehicles.

On April 23, the agency will issue a final request for proposals to industry for "Rapid Acquisition of a Small Rocket," with bids due at the end of May. This follows a draft request for proposal published in March. The NRO told me this is the first time the agency's Office of Space Launch will procure a rocket exclusively to launch small satellites.

The agency aims to award contracts in June for the winning companies to complete the project in time for a June 2019 launch. Sapp said there were many responses to the draft request, and that "the one universal comment" was distaste for the term "tiny rockets."

NRO Director Betty Sapp

"We'll work on that before we get the final RFP out later this month," she said.

The small rocket market has been growing due to increased demand for small satellites. https://aerospaceamerica.aiaa.org/u-s-spy-satellite-agency-to-seek-tiny-

rockets-for-small-sats/

Raytheon-Built Small Satellites to Support DHS' Search-and-Rescue Missions Jane Edwardson April 19, 2018 C4ISR, News

Raytheon has produced two small satellites for the Department of Homeland Security in support of search-and-rescue operations.

The *Polar Scout* satellites have radio frequency receivers that work to help search-and-rescue personnel track emergency signals in the Arctic and other remote areas.

The company partnered with Millennium Engineering and Integration, Rincon Research and Space Dynamics Laboratories to produce the satellites as part of the U.S. Air Force's *Operationally Responsive Space* program.

http://blog.executivebiz.com/2018/04/raytheon-built-small-satellites-to-support-dhs-search-and-rescue-missions/

Drones to help tackle Colombia's cocaine conundrum April 19, 2018 Feilidh Dwyer

Colombian police are adding drones to their arsenal in their battle against the country's resurgent cocaine producers.

Last year the DEA produced a report stating that 93 percent of cocaine in the US originated in Colombia. This fact is harming Colombia's relationship with the United States, and Colombian authorities are under pressure to get on top of the problem as soon as possible.

ABC News reports that the anti-narcotics branch of the police have enlisted a local UAV company to trial drones in a special role as part of the country's drug enforcement efforts.

Herbicide spraying drones, similar to the one pictured, are expected to put a significant dent in Colombia's cocaine production.

Each drone is laden with approximately 10 liters (2 gallons) of herbicide every flight. They will be capable of

destroying 8 hectares (20 acres) of coca per day. Current US estimates put the total coca crops growing in Colombia at more than 188,000 hectares. https://www.wetalkuav.com/drones-help-tackle-colombias-cocaine-conundrum/

Oil & Gas Supermajor Goes With Cyberhawk Drone Work for U.S. Project Betsy Lillian April 18, 2018

Drone inspections company Cyberhawk has been awarded a three-year contract by an undisclosed oil and gas supermajor to provide a digital asset management solution during the construction of its new world-scale petrochemical complex in the U.S.

The main construction phase of the project is underway, which involves the construction of processing units, cooling towers, rail and truck loading facilities, a water treatment plant, office buildings and a laboratory that provides drone-captured data such as orthophotos, spherical images, 3D point cloud models and video collected on a weekly basis. A visual overview of the project is provided at any given time and from anywhere in the world.

The project will create a central repository of information that can be referenced throughout construction, as well as once the plant is live. https://unmanned-aerial.com/oil-gas-supermajor-goes-with-cyberhawk-drone-work-for-u-s-project?utm_medium=email&utm_source=LNH+04-20-2018&utm_campaign=UAO+Latest+News+Headlines

Unmanned Traffic Management Market to Hit $2B by 2025 Jason Reagan April 17, 2018

Research firm ReportLinker this week released a study stating the unmanned traffic management market could reach $538.2 million by year's end with a projected growth level to almost $2 billion by 2025 — at a growth rate of 20.28 percent from 2018 to 2025.

"The growth of this segment can be attributed to the increased use of UTM services in various application areas, such as weather, flight information, emergency response, network and connectivity, and communication," the report states.

The study predicts the surveillance and monitoring segment of UTM will experience the highest growth rate over all due to rising use by law-enforcement and other security players.

Not surprisingly, North America is expected to lead the charge due to the "increasing investments in the development of UTM solutions by government agencies and private players from the US and Canada are expected to boost the market growth."
https://dronelife.com/2018/04/17/report-unmanned-traffic-management-market-to-hit-2b-by-2025/

Extracting Data from Rogue Drones Just Got Easier Jason Reagan April 13, 2018

 On Thursday, Swedish mobile forensics company MSAB announced a partnership with URSA to expand the business of drone forensics – collecting and analyzing telemetry and data from a captured drone engaged in unauthorized activities.

URSA's Idetic Unmanned tools provide – according to a press release - "the most accurate understanding of drone telemetry data to support academic, law enforcement, insurance, and intelligence investigations."

MSAB's Mobile Forensic Ecosystem enables police to extract and analyze data from mobile devices**.** https://dronelife.com/2018/04/13/extracting-data-from-rogue-drones-just-got-easier/

Intel Drone Light Show Steals the Show at Coachella Malek Murisonon: April 17, 2018

 Intel's shooting star drones have performed at Coachella for the second year in a row, lighting up the sky above the set of headlining act ODESZA.

It's one of the few times that the technology giant has been able to perform live above an audience, rather than events being prerecorded.

In an editorial, Intel's VP Anil Nanduri outlined the company's vision for the future of fireworks. "The sky is a blank canvas for creating new experiences with drone light shows,. We look forward to seeing these experiences in locations across the world from sporting events, theme parks, celebrations and more."

Nanduri believes that the company's light shows will go on to replace fireworks for good.
https://dronelife.com/2018/04/17/intel-drone-light-show-coachella/

20Apr18

How drones are helping combat monkey-spread malaria in Malaysia April 18, 2018 Feilidh Dwyer

Macaque monkeys, which are plentiful in Borneo, have been found to carry a strain of malaria that is deadlier than other types when it crosses over to humans. The Guardian reports that 69 percent of malaria cases reported in Malaysia during the past year were found to be from the monkey strain.

Drones are fulfilling multiple roles in the areas of Borneo with higher concentrations of macaques and other monkeys. Some drones are tasked with monitoring deforestation and keeping an up-to-date record of the state of the plant-life. A $14,000 fixed-wing UAV controlled via laptop will fly in grid patterns for 40 minutes at a time snapping pictures. Those photographs are then stitched together using software resulting in detailed, high-resolution maps of Borneo jungles (or lack thereof). In this application, drones represent a fast, cost-effective manner of assessing the state of plant-life compared to other methods (such as relying on satellite images or human observations).

Drones in the area have also been equipped with infrared cameras. These craft fly above the forests at regular intervals to keep track of the movement and migration patterns of groups of monkeys. The researchers who work for an organisation called the Monkey Bar Project, have also attached collars to individual monkeys to see how they react to deforestation. The combination of tracking collars and infrared images can aid researchers in quickly determining the number of monkeys in a particular area at a time. This data helps authorities predict and prepare for the next potential malaria outbreak.

Borneo – an island split between Malaysia and Indonesia.
https://www.wetalkuav.com/drones-combat-malaria-malaysia/?utm_source=WeTalkUAV&utm_campaign=6519e14cef-RSS_EMAIL_CAMPAIGN&utm_medium=email&utm_term=0_1d410cb84d-6519e14cef-83642867

DARPA Introduces Payload Launch Competition Monica Jackson April 19, 2018 News


The <u>Defense Advanced Research Projects Agency</u> has unveiled a prize competition that aims to shorten the timeline of payload launch operations.

The *DARPA Launch Challenge* will require multiple teams to deploy two different payloads from two different launch sites that will be announced only days before the scheduled space flight missions. Participants will compete for the $10 million grand prize in late 2019.

"We want to demonstrate the ability to launch payloads to orbit on extremely short notice, with no prior knowledge of the payload, destination orbit, or launch site," Todd Master, a program manager at DARPA's Tactical Technology Office. Master added the agency seeks to promote a fast turnover of space launches similar to that of airline operations.

The agency will pick the top three finalists based on speed, payload, mass and orbit accuracy. http://blog.executivebiz.com/2018/04/darpa-introduces-payload-launch-competition-todd-master-comments/

Dutch firm Cosine releases first images from hyperspectral camera aboard nanosatellite Brian Berger — April 19, 2018
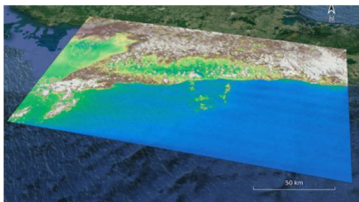
This image of Cuba was taken by the HyperScout hyperspectral camera flying onboard the GomX-4B nanosatellite.

COLORADO SPRINGS — Cosine Measurement Systems on April 19 released the first images from its HyperScout miniaturized hyperspectral camera flying since February on the experimental GomX-4B nanosatellite.

The camera, developed by an international consortium led by the Dutch company Cosine, separates light into 45 wavelengths, a treasure-trove of information for managing irrigation, monitoring fire hazards and detecting floods, among other change-detection applications.
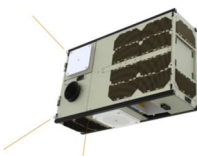
A GomSpace GomX-4 cubesat measuring 30x20x10 centimeters

The host satellite is a 6U cubesat measuring 20x30x10 centimeters and weighing eight kilograms. In addition to HyperScout, the European Space Agency-sponsored GomX-4B satellite also carries a miniaturized startracker

for Innovative Solutions in Space, aircraft- and ship-tracking antennas developed by GomSpace and an ESA radiation hardening experiment.

The GomX-4B was launched with GomX-4A, a structural twin built under separate contract for the Danish Ministry of Defence, on a Chinese Chang Zheng-2D rocket Feb. 2 from the Jiuquan Satellite Launch Center in China. http://spacenews.com/dutch-firm-cosine-releases-first-images-from-hyperspectral-camera-aboard-nanosatellite/

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