8Aug16

The Virginia **Department of Aviation (A841)** has publicly posted a Solicitation on eVA. A summary of the Solicitation is provided below:

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Solicitation RFI: 841:17-003 **Version:** 1 **Amendment#:** 0

Airport Obstruction Analysis and Evaluation Services utilizing an Unmanned Aerial System (UAS)

Close Date/Time: 09/09/2016 05:00 PM (All dates/times displayed in eVA are EST)

Airports are required to maintain clear approaches to their runway ends for safety and for compliance to grant assurances. DOAV performs periodic inspections to verify that airports meet standards requirements in order to be eligible for state funds. The DOAV's current methodology uses basic ground survey equipment for obstruction analysis. DOAV desires to contract with a vendor utilizing UASs in order to obtain obstruction data beyond what can be viewed from a runway end. Questions regarding this RFI shall be addressed to Benjamin Miller via email at benjamin.miller@doav.virginia.gov.

Aurora to Expand Unmanned Aircraft Flight Operations in Virginia

Published: 08 Aug 2016

Aurora Flight Sciences, a developer of unmanned aircraft systems (UAS), has announced that it is looking to expand the operational testing of its Centaur Optionally Piloted Aircraft (OPA) system to Lonesome Pine Airport in Wise County, Virginia. Through this endeavor, Aurora aims to continue advancing the Virginia Unmanned Systems Commission's progress toward making the state a leader in the unmanned systems industry, while also establishing Wise County as a research, development and operational hub for UAS.

Aurora will initially use the Centaur OPA system, a large UAS, to collect a variety of critical data for the state using advanced sensor technologies, and support the Mountain Empire Community College in developing its Aerial Drone Geo-Spatial Mapping and Surveyors course. The Centaur, developed by adding autonomy-enabling technology to the passenger seat of a DA-42 aircraft, provides ultimate flexibility for airborne sensing, testing and training by enabling the aircraft to be flown as a UAS or as a piloted aircraft. In its unmanned mode, the Centaur can spend 14 to 20 hours in flight to conduct missions that are too dull or dangerous for onboard pilots to execute. For the new Wise County operations, Centaur will either be flown on-board by the pilot, or in the Hybrid mode with an on-board safety pilot. Some of the jobs targeted for Centaur include: mapping and survey; predicting and detecting forest fires;

performing large-area (multi-state) inspections on roads, railroads, power lines, and waterways; performing mineral and vegetation mapping; and conducting emergency management operations.

http://www.unmannedsystemstechnology.com/2016/08/aurora-to-expand-unmanned-aircraft-flight-operations-in-virginia/?utm_source=Unmanned+Systems+Technology+Newsletter&utm_campaign=3d341f77ce-Unmanned_Systems_Technology_eBrief&utm_medium=email&utm_term=0_6fc3c01e8d-3d341f77ce-111778317

Airbus and Dedrone to Develop Drone Defense Systems

Published: 08 Aug 2016

Airbus Defense and Space's Electronics and Border Security (EBS) subsidiary, and Dedrone, a developer of drone detection technology, have announced a cooperative agreement to combine their skills to protect lower airspace from small drones. The partners intend to jointly offer drone defense systems that can reliably detect and defend against the unauthorized entry of drones in critical airspaces.

"All over the world, incidents with universally available small drones have revealed a security gap with regards to major events or critical installations such as airports," said Thomas Müller, Managing Director of Airbus DS Electronics and Border Security (EBS). "By pooling the capabilities of Airbus, with our long-range radar and jamming functions, and those of Dedrone, with their market-leading multi-sensor platform, we have a wide deployment range covering both urban and rural areas."

Dedrone's CEO Jörg Lamprecht adds: "Small drones have until now conquered lower airspace as criminals discovered this technology for smuggling, espionage and terrorist attacks. We offer an effective solution for this new threat that secures lower airspace once again. Airbus' and our systems complement each other perfectly, and combine early detection of drones in near and far fields with the ability to initiate effective countermeasures automatically."
http://www.unmannedsystemstechnology.com/2016/08/airbus-and-dedrone-to-develop-drone-defense-systems/?utm_source=Unmanned+Systems+Technology+Newsletter&utm_campaign=3d341f77ce-Unmanned_Systems_Technology_eBrief&utm_medium=email&utm_term=0_6fc3c01e8d-3d341f77ce-111778317

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Verifly Launches On-Demand Drone Insurance App.

The Las Vegas Review-Journal (8/8) reports that Nevada-based Verifly, "the first on-demand drone insurance company," debuted a new app on Monday for the burgeoning US drone industry. Verifly co-founder Jay Bregman explained that the app "draws a quarter-mile circle around you, and that's the [insurance] coverage area." Bregman added that the app "calculates the risks in that coverage area, and also environmental risks like wind."

According to Fast Company (8/8), insurance coverage starts at a rate of $10 per hour, "and rises based on flying conditions, like wind speed, and nearby landmarks, like schools and stadiums." The company will cover up to $1,000,000 for harm to people and property, as well as up to $10,000 for invasion of privacy.

UAS AI Uses Fuzzy Logic To Defeat Fighter Pilot.

Breaking Defense (8/8) reports that a company called PSIBERNETIX has published a paper in the University of Cincinnati Magazine claiming that its ALPHA artificial intelligence (AI) software has enabled UAS to "repeatedly and convincingly 'defeat' a human pilot" in Air Force Research Lab simulations. Former Air Force Battle Manager Gene Lee said the program "seemed to be aware of my intentions and reacting instantly to my changes in flight and my missile deployment. It knew how to defeat the shot I was taking. It moved instantly between defensive and offensive

actions as needed." Breaking Defense credits a special application of fuzzy logic for enabling the AI to accept "enormous" amounts of data, process it, and make decisions rapidly.

Sen. Booker Lauds Local Officials For Drone Use In Emergency Situations.

The Bergen (NJ) Record (8/8) reports that Sen. Cory Booker (D-NJ) offered high praise to Bergen County, New Jersey officials for "being the first in the state to gain approval to use drones for emergency response." Booker said, "We're trying to create an environment of innovation while also remaining safe."

Drone Completes First Long-Range Lab Sample Delivery

Published: 09 Aug 2016

Vayu, Inc. and Stony Brook University, with support from the Madagascan government and backing from the United States Agency for International Development (USAID), have completed the first ever series of long-range, fully autonomous drone flights transporting blood and stool samples from rural villages to centralized labs.

The exercise was undertaken to demonstrate how drones can be used to improve healthcare for vulnerable rural communities, where delivery of care is hampered by poor or non-existent roads. The samples were flown from villages in rural Madagascar to Stony Brook University's Centre ValBio research station, for further testing. The unique ability of Vayu's drone to take off and land like a helicopter and fly long distances could help vulnerable remote communities get the medical care they deserve.

"The flights to and from villages in the Ifanadiana district [of Madagascar] ushers in a new era in bringing healthcare to people living in really remote settings," said Dr. Peter Small, the Founding Director of Stony Brook's Global Health Institute. "This would not have been possible without the support of the government and people of Madagascar "In this context drones will find innumerable uses such as accelerating the diagnosis of tuberculosis and ensuring the delivery of vaccines."

http://www.unmannedsystemstechnology.com/2016/08/drone-completes-first-long-range-lab-sample-delivery/?utm_source=Unmanned+Systems+Technology+Newsletter&utm_campaign=3d341f77ce-Unmanned_Systems_Technology_eBrief&utm_medium=email&utm_term=0_6fc3c01e8d-3d341f77ce-111778317

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Diamandis: Flying Cars, Personal Drones Possible In Five Years.

Business Insider (8/9) reports that Hyperloop One Board Member Peter Diamandis believes that personal modes of flight transportation, including airbound cars and personal drones, could become a reality in the next five years. Diamandis told Business Insider, "I think we'll see a lot of demos happening in the next two or three years," adding, "I think we'll see, within five years, we'll start to see them in specific places. We'll start to hear a lot about it in the fall." He also "said that flying transportation systems will fundamentally change how we commute" by allowing people to commute aerially from their homes to city rooftops and then take autonomous cars to their final locations. According to the article, Diamandis' outlook has some credence, as Alphabet CEO and Google Co-Founder Larry Page "has secretly invested more than $100 million to develop flying cars."

CubeSats Poised To Perform Rare Study Of Thermosphere.

The Guardian (UK) (8/8) reports that scientists hope to learn more about Earth's thermosphere in January when 50 CubeSat miniature satellites are deployed from the International Space Station. One of the satellites, called UNSW-Ec0 and developed by the University of New South Wales in Australia, "will carry an Ion Neutral Mass Spectrometer

instrument to study the composition of the thermosphere." UNSW-Ec0 Project Leader Elias Aboutanios explained that thermosphere missions have been difficult to conduct in the past due to costs and because "there is enough air in the thermosphere to make satellites drop down towards Earth quickly." However, the technological advancements involving the lighter and cheaper CubeSats have made it less costly and more logistically sound to undertake such missions

Opinion: Physics Could Prevent Prime Air Drone Deliveries.

In Inc. Magazine (8/9), drone hobbyist and engineer Yoram Solomon writes that Amazon's Prime Air drones are an "especially exciting" commercial application for drones, and while FAA rules currently prevent drone delivery in the US, Solomon argues that "the laws of physics" do as well. While developing a drone program for his US Air Force Civil Air Patrol squadron, he began testing flight times and payloads, determining that "for a 30-minute flight, a drone's overall weight (drone + batteries + package) must be 20 times that of the package alone," with batteries accounting for most of the weight. The overall weight for a five-minute flight would need to be only 1.5 times the package's weight. Also, a drone won't be able to carry a package for more than 32 minutes. Solomon concludes that Prime Air drones must fly for no more than 30 minutes round trip, maintain speeds of no more than 40 MPH, deliver packages to locations within 10 miles of a fulfillment center, and weigh 100 pounds in order to deliver a 5-pound package.

UAS to Soon Deliver Medical Supplies in Several States

By AUVSI News posted 2 days ago

Delivery by UAS is headed to several states after the White House announced last week that a number of private firms will work with a federally backed program to deliver medical supplies in different states. The efforts will be led by Zipline International, which delivers medical supplies via their drone. Along with support from Ellumen, ASD Healthcare and a nonprofit called BloodworksNorthwest, Zipline International will deliver medicine to Maryland, Nevada and Washington. The initiative will look to provide aid to remote and hard-to-reach areas, as well as Native American reservations and their surrounding communities.

Through an article on Verge.com, Zipline founder and CEO Keller Rinaudo spoke on the importance of delivering medical supplies to certain areas that are ordinarily very difficult to reach. There's a linear relationship between how far away you live from a city and your expected lifespan," says Rinaudo. "So our hope is that this type of technology can solve those kinds of inequalities.

Zipline will make the deliveries using their UAS, called Zips. Zips can carry up to three pounds of supplies and can travel up to 75 miles per trip on a single charge. After regulatory approval, preliminary flights are expected to launch within six months. Some of the medical supplies that will be included on flights are blood, medicine and medical products that can potentially save lives. Zipline Inc., which was started in 2014, has already worked successfully in Rwanda. The initial flights will be made through several clinics, facilities and distribution centers in the states that they are working in.

http://www.auvsi.org/blogs/auvsi-news/2016/08/08/uas-to-soon-deliver-medical-supplies-in-several-states

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UK Engineers Develop Tethered Drone With Unlimited Flight Time.

Reuters (8/10) reports that engineers with the University of Southampton in England have developed a tethered drone that allows for unlimited flight time. Dr. Stephen Prior, with the University of Southampton, explains that the drone could be attached to a land vehicle and be driven around to various areas while remaining in the air. He adds,

“It’s basically a virtual mast, so you could imagine surveillance operations, rescue missions at sea or on land, surveillance of large complexes like nuclear power stations.”

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Central Louisiana Public Agencies Increasingly Using Drones.

The AP (8/11) reports that public agencies in Central Louisiana are increasingly using drones to facilitate their work, and even provide assistance in potential life-or-death situations. Lt. Tommy Carnline, with the Rapides Parish Sheriff’s Office, said that his department uses a drone for “search and rescue on land-based operations,” adding, “It aided in the location of a man who was lost over on the levee in Rigolette.” In addition, the Louisiana State University (LSU) AgCenter “works with eight battery-powered drones used in the Central Louisiana area for agricultural purposes.” LSU Assistant Professor Randy Price said, “Mainly what they get used for is to look straight down at the crops...and that shows us where good and bad growing areas are in the fields.”

FAA Investigating Drone Sighting Near Boston Airport.

The Boston Globe (8/11) reports briefly that the FAA is investigating reports of a drone sighted near Logan International Airport on Thursday morning. According to FAA spokesman Jim Peters, the crew aboard a United Airlines flight en route from Boston to Chicago saw the drone about 10 miles northeast of the airport.