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ODU students helping firefighters, law enforcement through drone class

By Mike Connors, The Virginian-Pilot, Dec 2, 2016

Old Dominion University students have spent this semester working with drones – but not to spy on anyone.

Rather, they've focused on projects to help firefighters find blazes in remote areas and aid law enforcement in navigating water rescues. They've worked with crews in Carova, N.C., an Outer Banks community filled with dirt and sand roads and long stretches of beach that aren't easy to reach.

The course is offered jointly by James Madison, George Mason and Old Dominion universities. Forty-one students, 16 from ODU, meet on Wednesday nights, sometimes through videoconferencing.

Called "The Virginia Drone Project," the course explores ways the flying machines can help solve community problems.

Or, as ODU doctoral candidate Brian Duvall put it: "Show the public what these things really are capable of doing." http://pilotonline.com/news/local/education/public-schools/odu-students-helping-firefighters-law-enforcement-through-drone-class/article_84d13646-c204-54a9-a33a-75c6107ba742.html

Qualcomm Testing Solution To FAA's "Line Of Sight" UAV Requirement.

[Bloomberg News](#) (12/4) reports that Qualcomm has been working on a workaround of the FAA's "line of sight" UAV requirement in order to make it easier for companies to deliver packages across the US. Qualcomm proposes connecting UAVs to the same networks of towers that connect phones to each other and to the Internet. According to Bloomberg, that would allow UAV operators to "be able to track and maneuver them even when they aren't visible."

Project Wing Receives FAA Certification For UAV Operations. [Quartz](#) (12/3) reported that Project Wing, Alphabet's "plan to deliver goods using autonomous drones," has received certification from the FAA to "control up to 20 drones at a time." The article said that "this is a first step in setting up a regulatory framework that Alphabet can eventually use to set up a delivery-drone service."

Industry For Counter-UAV Technology Is "Emerging."

[ComputerWorld](#) (12/3) reported on "emerging" counter-UAV technology that allows for "drone detection, tracking, identification, disabling, and even hacking and hijacking the drones as they fly." The article noted recent UAV sightings at US airports, including one UAV spotted "flying at an incredible 4,000-foot altitude" near Dallas-Fort Worth International Airport. At Denver International Airport, the FAA is pioneering the use of "drone zappers" to deter UAV operation in no-fly zones.

UAV Photographer Receives FAA Permit To Fly Above Standing Rock Protests.

[Forbes](#) (12/2) reported that the FAA has granted a waiver to a UAV operator to fly aircraft over the Standing Rock protests in North Dakota between December 5 and 7. The operator, photographer Robert Levine, is required to fly his UAV below 400 feet above ground, and is prohibited from flying it during nighttime or beyond visual line of sight. Levine holds a Part 107 certificate from the FAA "authorizing him to fly small unmanned aircraft." The FAA previously had prohibited any UAV operations in the no-fly zone above the protests.

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UST Launches World's-First Virtual Unmanned Systems Tradeshow

Published: 06 Dec 2016, Unmanned Systems News

The team behind UnmannedSystemsTechnology.com (UST) is pleased to announce plans to introduce a virtual tradeshow in 2017. The UST Expo will be the world's first 'virtual' tradeshow to exhibit companies, and showcase their capabilities, within the unmanned systems industry. Once live, visitors will be able to access the virtual tradeshow 24 hours a day, 7 days a week, 365 days of the year. Upon registration, the UST Expo will be free to access.

Similar to a traditional tradeshow or exhibition in a convention center, the UST Expo will allow exhibitors to display information related to their products or services in a virtual booth. Multimedia, such as videos and slide-show presentations, can be featured in the booth to offer a truly engaging experience for the visitor. Visitors will be able to view these virtual trade show displays in the exhibition hall and, crucially, can connect with exhibitors via the Internet to request more information. It is anticipated that visitors will be able to initiate instant communication with exhibitors via instant messaging, email or Skype.

Designed to be suitable for both larger corporations and smaller companies, the UST Expo will provide exhibitors with an online platform to connect directly with researchers, engineers and key personnel within the unmanned systems industry. Exhibiting in the virtual tradeshow, will cost a fraction of that associated with physical exhibitions, and companies will also save time and avoid the hassle often associated with logistics and staffing considerations. Importantly, exhibitors will be able to update their booths as often as required, to ensure visitors always have access to the latest information and developments, without having to re-print expensive graphics.

To register for your free access-all-areas pass, or to express an interest in exhibiting, please visit expo.unmannedsystemstechnology.com or email Caroline@unmannedsystemstechnology.com.
<http://www.unmannedsystemstechnology.com/2016/12/ust-announces-new-virtual-tradeshow-for-2017/>

Groen Aeronautics to Develop VTOL Gyroplane Drones

Published: 30 Nov 2016

Groen Aeronautics Corporation (GAC) has announced that it has received funding to develop the company's ReconHawk Gyroplane Drone through to production.

"We have made this investment because we are confident that applying GAC's most remarkable technologies and know-how to create affordable vertical takeoff and landing drones is an investment worth making," said Mr. Paul Alar, founder of Atlanta-based investment firm West Mountain LLC. West Mountain has made previous investments into Groen's sustained autorotative flight efforts.

By bringing its Gyroplane Platform to drones, Groen Aeronautics Corporation is ready to commercialize its gyroplane technology for the unmanned aircraft market. Gyroplanes do not require a runway and are less complex than other VTOL aircraft, meaning that Groen hopes to produce a drone which will operate at lower cost and greater reliability than other aircraft.

GAC's initial production drone will be "optionally manned," meaning that a human pilot can fly it to where it needs to be used, before it is sent off on its autonomous or remotely piloted mission. This can be far more efficient than disassembling a drone aircraft, crating it, shipping it, uncrating it, reassembling it, inspecting it and test flying it to ensure correct reassembly, and then sending it on its mission.

<http://www.unmannedsystemstechnology.com/2016/11/groen-aeronautics-to-develop-vtol-gyroplane-drones/>

NaviPack Announces LiDAR Navigation Module for Autonomous Vehicles: 03 Dec 2016

NaviPack has announced the release of a LiDAR navigation module for autonomous control of drones, robots, and other devices. The NaviPack system is being introduced via its Indiegogo page.

The NaviPack module features a built-in Simultaneous Localization and Mapping (SLAM) algorithm chip. By integrating the control chip and LiDAR together, NaviPack becomes a true plug-and-play LiDAR solution that instantly powers drones and robots with 360 degree sensing capabilities, reducing integration times for navigation systems.

Once installed and powered up, NaviPack immediately scans its surroundings, builds a detailed map of the area and takes over control of the device. Its scanner has a frequency of 3000 points per second and identifies objects up to 15 meters away. It continuously scans the area and makes split second decisions to steer clear of people or objects for safe path selection, obstacle avoidance, and accurate mapping.

<http://www.unmannedsystemstechnology.com/2016/12/navipack-announces-lidar-navigation-module-for-autonomous-vehicles/>

Flying Robotic Ambulance Completes First Solo Test Flight

By Jesse Emspak, Live Science Contributor | December 2, 2016 05:11pm ET

A new automated flying ambulance completed its first solo flight, offering a potential solution for challenging search and rescue missions. Completing such missions in rough terrain or combat zones can be tricky, with helicopters currently offering the best transportation option in most cases. But these vehicles need clear areas to land, and in the case of war zones, helicopters tend to attract enemy fire. Earlier this month, Israeli company Urban Aeronautics completed a test flight for a robotic flying vehicle that could one day go where helicopters can't.

On Nov. 14, the company flew its robotic flyer, dubbed the Cormorant, on the craft's first solo flight over real terrain. The autonomous vehicle is designed to eventually carry people or equipment (as reflected in its former name, the AirMule) without a human pilot on board. [9 Totally Cool Uses for Drones] Urban Aeronautics said the test was "a significant achievement for a student pilot, human or nonhuman," and said the company is "proud" of the vehicle's performance.

The Cormorant uses ducted fans rather than propellers or rotors to fly. These fans are effectively shielded rotors, which means the aircraft doesn't need to worry about bumping into a wall and damaging the rotors. Another set of fans propels the vehicle forward, according to Urban Aeronautics.

http://www.livescience.com/57080-flying-robotic-ambulance-completes-test-flight.html?utm_source=notification

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Universal wants drones to enhance the overall theme park experience

Dec 5, 2016, 11:10am PST Richard Bilbao, Reporter, Orlando Business Journal

Just like Walt Disney World, Universal's theme park technology division may be looking at drones as the way for theme parks to bring a deeper experience to guests. Universal City Studios, a sister division of Universal Parks & Resorts, had a patent published on Nov. 29 called "Special Effects Techniques" that is looking at finding another use for unmanned aerial vehicles (or drones) to deliver special effects during shows, rides and, potentially, individual guests.

"An unmanned aerial vehicle, e.g., multicopter, is outfitted to provide a special effect or special effects, becoming an untethered special effects platform. The special effects delivered by such a platform could include water effects, scent cannons, compressed air blasts, steam blasts, theatrical smoke or fog, snow, bubbles, confetti, flame effects, or directional speakers and other audio effects. In one embodiment, the untethered special effect vehicle may be used in conjunction with a live show. The placement or path of the special effect may be pre-choreographed or provided in real-time to correspond to the show," said the patent.

For example, the patent talks about using drones during shows where they would be disguised as a character or object that interacts with actors. Drones could also be used to provide regular effects during a show, but without being constrained to a non-moving pole, which could allow for regular updates and changes to shows without having to always be restrained by a non-movable special effects platform.

The patent also states drones could also be used to communicate with wearable technology the guest may have — say maybe the TapuTapu bands at Universal Orlando Resort's Volcano Bay. "The guest [may target] the companion or an individual guest may target themselves. For example, a guest may wish to receive a cooling mist spray or a bubble effect. By providing an input to the handheld device or via the guest-wearable device, the special effects [drone] is instructed to move toward the guest," said the patent, which also said it could be used for in-park games or other live-action experiences.

<http://www.bizjournals.com/losangeles/news/2016/12/05/universal-looking-into-drones-for-theme-park.html>

BAE Systems kicks off next stage of unmanned air trials

6th December 2016 11:26 am

A Jetstream 31 aircraft is being used as a flying testbed for the next phase of BAE Systems' unmanned aircraft trials. (Credit: Ray Troll/BAE Systems)(Credit: Ray Troll/BAE Systems)

Over the course of 17 test flights from Warton, Lancashire, to Inverness, the company will test the capability of its autonomous technologies to control the Jetstream via satellite link. Two pilots will be on board to operate the plane for take-off and landing, along with two engineers to assess the performance of the unmanned systems. Support on

the ground will come from a flight test observer and an unmanned air vehicle commander, as well as air navigation service provider NATS.

The Jetstream is fitted with an antenna that detects transponder signals from other aircraft. A cockpit-mounted camera links to the onboard computer systems and enables the aircraft to 'see' potential hazards even in the absence of signals. It can also recognise different cloud types and, when required, adjust course to avoid adverse weather.

The trials, set to cost around £400,000, will build on the ASTRAEA (Autonomous Systems Technology Related Airborne Evaluation and Assessment) Research and Development programme that BAE Systems ran from 2008-2013. <https://www.theengineer.co.uk/bae-systems-kicks-off-next-stage-of-unmanned-air-trials/>

Virginia won't be the launch site for Orbital's next space station mission

Tamara Dietrich tdietrich@dailypress.com

Virginia won't be the launch site for Orbital's next space station mission in the spring. An unmanned Antares 230 rocket nailed its launch from Wallops Island on Oct. 17, signaling Virginia's return as a site for commercial resupply missions to the International Space Station. But it appears the next ISS mission for rocket-maker Orbital ATK won't be from here, but from Florida.

It's an eyebrow-raising decision given that Orbital had only just returned to MARS after an earlier version of its rocket, the Antares 130, exploded just after lift-off in October 2014, wrecking the state-owned launch pad and spurring the company to replace the Russian-made first-stage engines behind the mishap.

On Tuesday, though, Orbital spokesman Barron "Barry" Beneski cautioned against reading too much into the one-time decision. If anything, he said, the Antares 230 "overperformed" last October, boosting the Cygnus a bit higher and faster than expected, which looks promising for future missions from MARS.

"It's got nothing to do with Wallops, it's got nothing to do with Antares," Beneski said in a phone interview. "It worked great, and the MARS team and the Wallops team and the Antares team worked great together. It's really primarily more of a NASA issue, with interest in more cargo and better schedule assurance."

An Atlas V allows Orbital's Cygnus cargo craft to carry about 660 pounds more payload. And a Cape launch, he said, enables a better fit with NASA's busy launch schedule.

<http://www.dailypress.com/news/science/dp-nws-antares-launch--florida-20161206-story.html>

AeroVironment Reports Loss As UAV Sales Struggle.

The [Wall Street Journal](#) (12/6, Subscription Publication) reports that AeroVironment Inc. on Tuesday reported a loss of \$4.2 million – or \$0.18 per share – in its most recent quarter, compared with analyst predictions of a per-share loss of \$0.01 on revenue of \$52.2 million. The UAV maker reported that revenue slipped 22% to \$50.1 million as sales declined by about \$15.8 million, compared with analyst expectations of \$0.24 per share on revenue of \$75.65 million, leading shares to drop 9.7% to \$26.50 in after-hours trading Tuesday. AeroVironment issued a gloomy forecast for the current quarter, with expectations for a per-share loss of between \$0.34 and \$0.38 on revenue between \$50 million and \$52 million.

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US Navy MQ-4C Triton UAV To Get Collision Avoidance System.

[Scout](#) (12/7) reports that the US Navy's MQ-4C Triton – High Altitude Maritime UAV "is now being configured with collision avoidance technology" called "the Automatic Response Module of the Airborne Collision Avoidance System X." Northrop Grumman has been awarded a \$9.6 million contract to install the system into the UAV's avionics, and will "test and support the software and ensure [its] proper functioning." The MIT Lincoln Laboratory said that the system's tracking algorithms use "probabilistic models to represent various sources of uncertainty (e.g., pilot nonresponse, surveillance errors, etc.) and computer optimization to consider safety and operational objectives as defined by system experts and operational users."

Alphabet Looks To Build Marketplace For UAV Deliveries.

The [Puget Sound \(WA\) Business Journal](#) (12/7, Subscription Publication) reports that Alphabet “plans to build an online marketplace for \$6 drone deliveries called ‘Wing Marketplace.’” The concept already has drawn interest from Domino’s Pizza, Whole Foods and “several other fast food establishments,” though talks with Starbucks have “stalled” over pricing.

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UAV Industry Group Makes Policy Recommendations.

[TechCrunch](#) (12/7) reports that now that President-elect Trump has selected Elaine Chao as incoming Transportation Secretary, the UAV industry is eagerly waiting to see who will join her team as FAA Administrator. TechCrunch notes that “this week, a drone industry trade group called the Commercial Drone Alliance sent the Trump transition team a letter with some policy and personnel recommendations,” encouraging Trump to “hire commercial drone experts into the new administration.” The group “is hoping Trump’s FAA will prioritize the following:” 1) “rules that allow drones to fly for commercial purposes”; 2) “an approach that involves multiple agencies in solving problems and setting rules around various drone-related problems”; and 3) “government-industry collaboration.”