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MACH FEB 3 2017, 11:22 AM ET

## **This Cyborg Insect Could Bring Big Advances In Medical Care**

by MINDY WEISBERGER, LIVE SCIENCE

Scientists look to flying animals — birds, bats and insects — for inspiration when they design airborne drones. But researchers are also investigating how to use technology to interact with, and even guide, animals as they fly, enhancing the unique adaptations that allow them to take to the air. To that end, engineers have fitted dragonflies with tiny, backpack-mounted controllers that issue commands directly to the neurons controlling the insects' flight.

This project, known as DragonflEye, uses optogenetics, a technique that employs light to transmit signals to neurons. And researchers have genetically modified dragonfly neurons to make them more light-sensitive, and thereby easier to control through measured light pulses.

<http://www.nbcnews.com/mach/technology/cyborg-insect-could-bring-big-advances-medical-care-n716391>

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## **Amazon's Super Bowl Ad Teases That "Prime Air" UAVs Are Coming "Soon."**

[Ars Technica](#) (2/5) reports that on Sunday, one of Amazon's short Super Bowl television ads "included a surprise cameo: an Amazon delivery drone, described to viewers as a 'Prime Air' delivery," with a voiceover saying, "Look for delivery soon." The ad showed a branded UAV delivering a snack shortly after a woman placed an order. The ad's disclaimer said, "Prime Air is not available in some states (or any really). Yet." The ad and other signs "suggest Amazon is ramping up its efforts" to introduce UAV delivery, although the FAA has not issued rules for UAVs operating outside of the operator's "line-of-sight," as Amazon's would.

## **Lady Gaga's halftime show drones have a bright future** Wired, Brian Barrett

The best Super Bowl halftime shows leave indelible memories, be it a notorious wardrobe malfunction, that goofy Left Shark, or every last second of Beyoncé's two appearances. It's too soon to say whether anything Lady Gaga did tonight will resonate, but at least she offered something new: An army of dancing drones, ducking and dodging over the Houston skyline, transforming from stars to a fluttering flag.

It's probably first time you've seen 300 drones flying in formation, but it's almost certainly not the last. The technology underpinning the Intel Shooting Star drone system is fascinating in and of itself, but its potential applications are even more so. The same drones that accompanied Lady Gaga will one day revolutionize search-and-rescue, agriculture, halftime shows, and more.

Each drone is about a foot long square, weighs just over eight ounces, and sports a plastic and foam body to soften inadvertent impacts. They aren't as flashy as consumer quadcopters, which is just as well, because you're not supposed to notice them. Instead, you're supposed to notice the four billion color combinations created by the onboard LEDs, and the aerial acrobatics choreographed with meticulous coding. Each drone communicates wirelessly with a central computer to execute its dance routine, oblivious to what the hundreds of machines around it are doing. The system can adapt on the, er, fly, too. Just before show time, the computer checks the battery level and GPS signal strength of each drone, and assigns roles accordingly. Should a drone falter during the show, a reserve unit takes over within seconds. All of which is pretty cool in its own right. But making it work for the biggest television event of the year takes a whole different level of planning.

<http://www.msn.com/en-us/news/technology/lady-gaga%E2%80%99s-halftime-show-drones-have-a-bright-future/ar-AAmFIBn>

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## **Intel Basks in Afterglow of Super Bowl Light Show Launched by Its Drones**

Fleet of 300 small copters flew in gigantic formations of U.S. flag, and a game sponsor's logo

By TED GREENWALD Feb. 6, 2017 6:18 p.m. ET

Intel Corp. scored a public-relations coup during Sunday's Super Bowl halftime extravaganza, showing off a product that wasn't actually there and isn't available for sale. As singer Lady Gaga crooned a medley of patriotic songs, television viewers saw the Houston skyline behind her light up with twinkling stars that turned red and blue before taking the form of the Stars and Stripes spread across the sky.

The roving stars were a fleet of 300 Intel Shooting Star drones, remote-controlled fliers equipped with LED displays. Each lightweight, four-rotor copter can display any one of four billion colors at a time, including those of Old Glory as well the logo of Intel and sponsor PepsiCo Inc., which were shown in the sky as the halftime show ended. But the drones didn't actually fly in the show on Sunday night.

The U.S. flag and Pepsi displays, along with the scene of Ms. Gaga singing atop the roof of NRG Stadium, were filmed early last week and projected on the stadium's screens, according to Anil Nanduri, vice president of Intel's New Technology group and general manager of the drone division.

<https://www.wsj.com/articles/intel-basks-in-afterglow-of-super-bowl-light-show-launched-by-its-drones-1486423132>

## **DARPA Unveils "SideArm" UAV Recovery System.**

[Engadget](#) (2/6) reports that DARPA has revealed its "SideArm" system designed to catch UAVs in mid-air, providing a "novel" solution for recovery of the aircraft in military applications. The system – which is shown in operation in a video accompanying the article – is part of the agency's Tern program "that seeks ways to integrate drones into Navy ships and operations without having to drastically renovate the vessels in accommodation." The system can fit into a shipping container and be set up for operation by two to four people. To test the system, DARPA used "a 400-pound Lockheed Martin Fury UAS, but it's reportedly sturdy enough to catch drones weighing up to 1,100 pounds."

## **Avion Unmanned Announces Online UAS Training Portal** Published: 04 Feb 2017

Avion Unmanned's Unmanned Aircraft Systems (UAS) Training Team has announced the launch of its new Online UAS Training Portal. Designed and developed to prepare groups and individuals in law enforcement and the commercial sector for the challenges faced in the operation of drones in the National Airspace System (NAS), the UAS training portal offers self-paced remote training that encompasses recently released Federal Aviation Administration (FAA) UAS regulations.

Avion Unmanned is the UAS division of Avion Solutions, Inc. Backed by over 20 years' experience developing equipment and training for the US Military, the portal utilizes the cloud-based TalentLMS (Learning Management System) in collaboration with seasoned aviation instructors. Training includes courses in aircraft systems, aerodynamics, flight control software, weather, airspace, etc. from the Part 107 Remote Pilot Exam. Based on the 5-day in-person training course, the Online UAS Training Portal allows students to experience the same proven training criteria used to educate law enforcement and public agencies. <http://www.unmannedsystemstechnology.com/2017/02/avion-unmanned-announces-online-uas-training-portal/>

## **Airware to Provide On-Site Drone Solutions to Caterpillar Dealers** Published: 07 Feb 2017

Airware has secured a strategic investment from Caterpillar Ventures which will allow Airware to accelerate programs that will enable Caterpillar dealers to offer their customers drone services and analytics solutions within the construction, mining, and quarrying industries. The drone services will include a core set of photogrammetry, mapping, and volumetrics tools, and a suite of advanced analysis and reporting modules.

Greg Arranz, , General Manager, SITECH at Bergerat Monnoyeur added: "We are committed to bringing cutting-edge technology and world-class services to our customers. Airware is an established leader in putting drones to work for mining, construction, and quarrying. They understand the needs of our customers, what it takes to scale operations, and the importance of offering industry-specific analytics to drive better decision making. We're proud to bring Airware to our customers." The investment highlights Caterpillar's commitment to developing Industrial Internet of Things (IIoT) technologies.

<http://www.unmannedsystemstechnology.com/2017/02/airware-secures-investment-caterpillar-ventures-drone-analytics-services/>

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## 3D Robotics and Autodesk Conduct First FAA-Approved UAS Flight at an Airport

By AUVSI

On Jan. 10, 3D Robotics and Autodesk conducted the first UAS flight at an airport that was approved by the Federal Aviation Administration, under the Part 107 rules. The flight was used to collect aerial data of two parking structures at the Hartsfield–Jackson Atlanta International Airport, which are scheduled to be demolished.

3D Robotics and Autodesk were charged with the task of conducting these flights after a design and engineering firm named Atkins was commissioned by the city of Atlanta to help with the expansion of the world’s busiest airport, by demolishing the two parking structures. Knowing that the quickest way to obtain the information necessary for this project was through using UAS, Atkins reached out to 3D Robotics and Autodesk so that they could gain permission from the FAA to conduct the flights.

To get permission to conduct the flights at the airport, the team from 3D Robotics first had to obtain authorization through the FAA’s new online portal. During the authorization process, 3D Robotics and Atkins successfully demonstrated the ability to safely operate 3D Robotics’ autonomous aerial data capture platform, the Site Scan, in a critical location.

After coordinating with Atlanta’s air traffic control tower, the companies were granted airspace authorization by the FAA, allowing them to capture aerial data of Atkins’ construction site. Some provisions of the authorization were that the 3D Robotics team had to maintain radio contact with the Atlanta control tower during the entire flight, while also performing all operations under the control tower’s authority. <http://www.auvsi.org/blogs/auvsi-news/2017/02/02/3d-robotics-and-autodesk-conduct-first-faa-approved-uas-flight-at-an-airport>

## PBOT wants \$12K for drones to assess storm damages

Lisa Balick and KOIN 6 News Staff

Published: February 6, 2017, 5:17 pm Updated: February 6, 2017, 5:22 pm

PORTLAND, Ore. (KOIN) — The Portland Bureau of Transportation is asking for thousands of dollars to purchase drones that officials say will help them assess damages left by landslides and sinkholes that develop during adverse weather conditions. Just this past weekend, heavy rains that pounded the region caused several landslides, sinkholes and left many areas severely flooded. A landslide on Skyline Boulevard in Northwest Portland left behind 200 cubic yards of mud and debris. Authorities say it will take days to stabilize the hillside.

“It’s really stunning,” Dylan Rivera with PBOT said. “In just trying to take a picture of it, it’s hard to believe there’s a road under this much debris.” PBOT’s John Brady tells KOIN 6 News it’s hard to inspect landslides from top to bottom. Having a drone would allow them to capture damages from all angles.

“It’s one of the things that’s typically hard about landslides is it’s hard to inspect them,” Brady said. “They’re often in very steep places. We can see them from one vantage point or the other, but we really

need to do both.” As part of its \$2.8 million budget request for 2017-2018, PBOT will ask the Portland City Council for \$6,000 for a professional-grade drone, \$1,500 for an amateur drone and costs for cameras, training and certification so officials can safely fly them over damage areas after major rain and snow events. The total cost of the drones? \$12,000. <http://koin.com/2017/02/06/pbot-wants-12k-for-drones-to-assess-storm-damages/>

## **Analysis: Google’s Sale Of Satellite Business Clears Way For Industry’s Maturation.**

[The Atlantic](#) (2/7) reports that, “paradoxically,” Google’s exit from the small satellite market cleared the way for the industry to make accelerated progress. The sale of its in-house satellite business Terra Bella to Planet, Inc. “pushed one of the most interesting sectors in Silicon Valley toward maturity” and “brought a milestone in cartography closer to reality” by speeding up Planet’s ability to “photograph every place on the entire planet every day.” The Atlantic reports that with the consolidation, “Planet is now the de facto leader in the small-satellite [industry],” adding that with the addition of Terra Bella’s constellation of seven satellites, it will soon surpass Iridium Communications as the operator of the largest constellation if its launch of 88 small satellites later this month is successful.

## **San Diego Considering Proposed UAV Ordinance.**

The [San Diego Union-Tribune](#) (2/7) reports that today, the San Diego City Council’s Public Safety Committee will consider a proposed ordinance that would criminalize reckless use of UAVs and authorize the city’s police to cite operators for violations. The proposed ordinance, prompted by several incidents near local airports, “would simply adopt the FAA’s regulations into the city’s municipal code” instead of following other cities “that have gone beyond the FAA rules in trying to protect privacy rights.” The FAA has urged cities to take the limited approach being considered by San Diego to avoid a “patchwork quilt” of regulations across municipalities.

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## **Israel’s Flying Production Unveils New VTOL UAVs.**

[FlightGlobal](#) (2/8) reports that Israeli firm Flying Production has announced new multi-rotor VTOL UAVs. CEO Erez Meir detailed the new “Thor” and “Nox” systems. The larger Thor system features “fully autonomous flight modes and a very low signature,” an electro-optical/infrared (EO/IR) sensor that offers a clear 360° view, and supports a 3kg payload. The “micro” Nox system “is intended for use mainly for the paramilitary market,” and can be deployed in minutes by one operator. The new systems follow Flying Production’s introduction of its Da Vinci model last year. The company has also “teamed with Elbit Systems to compete for an Israeli army VTOL UAV requirement named Zur.”

## **Atlanta Effort Could Demonstrate Usefulness Of UAVs For Airports.**

[Business Insider](#) (2/8) reports that an Atlanta partnership, under a “special exception” from FAA rules, is using UAVs to conduct airport operations, which “could serve to prove to” FAA officials the value of the aerial vehicles at airports, where they are currently banned. The city, robotics company 3DR, software firm Autodesk, and engineering firm Adkins “are working together to map out the airspace of the city’s Hartfield-Jackson International Airport to prepare for a potential expansion,” and their use of UAVs in the project could demonstrate the aircrafts’ usefulness – if regulated properly – in airport operations including the collection of airspace and weather data and the coordination of takeoffs and landings.

## **NanoRacks CEO: Private ISS Airlock To Enable More “CubeSat” Deployments.**

In continuing coverage of the Monday announcement that NanoRacks, in coordination with Boeing, will build a new commercial airlock for the ISS, the [Christian Science Monitor](#) (2/8) reports that the “addition will expand private firms’ presence in low-Earth orbit, which NASA hopes will allow it to focus on exploring the solar system.” NanoRacks CEO Jeff Manber said that the new airlock will allow the company to triple deployments of “CubeSats” from the ISS, compared to the limited pace accommodated by the station’s sole current airlock. He explained that while the space community had long assumed that drug research would be the first “big commercial use” for space stations, in the “mysterious way that the commercial marketplace works, the first big commercial hit...has turned out to be deploying satellites.” Robyn Gatens, deputy director of NASA’s ISS division, said that “there is great interest in both” experiments and satellite deployments.

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## Report: UAV Deliveries Won't Be "Major Factor" For Several Years.

[Fortune](#) (2/9) reports that despite "news organizations' fascination with the subject," a new report by Gartner has concluded that "widespread deliveries by drones 'will not be a major factor for several years.'" The report, released Thursday, forecast that deliveries will represent less than 1 percent of the commercial UAV market by 2020, explaining that "return on investment has not been proven either in regard to the cost of the drone, operational costs and a single customer delivery." Amazon and Google "are still exploring the use of drones for deliveries," although Google recently scaled back its Project Wing UAV delivery initiative.

## Humanitarian UAV Network

Dear All,

In 2014, UAViators started the UAV Travel, Laws, & Regulations Wiki as an effort to collect vital information on UAV laws from around the world. Together with FSD and partners, we recently launched the next version of this repository of global drone regulations. The new, considerably updated database includes summaries of national laws of more than 100 countries with the aim to help better inform drone pilots and stakeholders in the humanitarian sector. Members of UAViators are highly encouraged to help further improve its contents by signing up and suggesting edits.

You can find a link to the new database on the <http://uaviators.org/laws> page. We would like to thank FSD for updating and hosting the database.

All the best,

Patrick

Visit Humanitarian UAV Network at: [http://uaviators.org/?xg\\_source=msg\\_mes\\_network](http://uaviators.org/?xg_source=msg_mes_network)