UAS and SmallSat Weekly News

Contents

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Deveron Expands Drone Data Collection in Canada for Leading Canadian Agricultural Producer

Deveron UAS Corp. is pleased to report that a trial program of drone-data collection for one of Canada's largest agricultural producers has commenced. The drone data collected by Deveron, specifically focused on higher-value crops, will be used to support its customer's research opportunities in western and Atlantic Canada. Deveron is providing various layers of data, including thermal, to help drive more informed decisions in crop production.

According to global consulting firm PwC, **the market potential for the commercial drone industry is valued at over $127 billion with agriculture making up $32.4 billion**. In addressing this market opportunity, Deveron is building a **standardized network** of drones and sensors to provide a scalable data solution **for growers throughout North America**. The Company continues to expand its on-demand data solutions to support the decision-making of companies that are integrating drone technology in precision agriculture. http://uasweekly.com/2017/08/25/deveron-expands-drone-data-collection-canada-leading-canadian-agricultural-producer/?utm_medium=push_notification&utm_source=rss&utm_campaign=rss_pushcrew

Battelle's DroneDefender™ Joins Forces with Dedrone

Battelle's DroneDefender™ **defeats drones**. Dedrone's platform alerts to the presence of rogue and unauthorized drones in protected airspace. The two companies announced today they have signed a Memorandum of Understanding (MOU) which will explore ways to create an end-to-end solution to provide airspace security for our country's sensitive infrastructure.

The technology is restricted to use by federal authorities under a strict permitting process, but sales are taking off with more than 200 units sold to the U.S. Department of Defense, the U.S. Department of Homeland Security, and international customers. DroneDefender is the first man-portable, accurate, and easy-to-use system to provide security protection. It is an inexpensive,

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lightweight point-and-shoot system with demonstrated effectiveness.
http://uasweekly.com/2017/08/25/battelles-dronedefender-joins-forces-dedrone/?utm_medium=push_notification&utm_source=rss&utm_campaign=rss_pushcrew

Nokia's Clever New Drones Get A Name, May Save Your Life One Day

Ian Morris

Nokia

Drone for search and rescue, site surveys and even security.

Nokia is working on drones and has made the significant step of registering a name for this hardware, according to LetsGoDigital. The company has registered **"OVNI"** with the European Union Intellectual Property Office as a name for its drones, which are classified as telecommunications devices for civilian and military use.

Nokia has big plans for drones, having announced early in the year that it was using them for search and rescue operations. A set of drones, flying in formation, can be used very effectively to search for people in a disaster area, or if they are lost in a remote area.

The company also pairs these drones with its own Ultra Compact Network system. This can be used from the ground - either in a backpack, on a vehicle or mounted to a balloon or even flown from another drone. These portable LTE networks are then used to get video feeds back from aerial search drones where no existing infrastructure exists **or has been knocked offline due to a disaster.** https://www.forbes.com/sites/ianmorris/2017/08/24/nokias-clever-new-drones-get-a-name-may-save-your-life-one-day/#146b88ea2000

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Go fetch! Drones help Swiss rescue dogs find the missing August 25, 2017

by Nina Larson

A massive landslide on the Piz Cengalo mountain in the Swiss Alps left eight people missing and triggered a search-and-rescue mission where dogs and drones were deployed. "The main benefit is to gain more time, to be more efficient and to be faster to find the missing person," Dominique Peter, a pilot with the Swiss Federation of Civil Drones, told AFP.

The federation has for nearly a year been working with the Swiss Association for Search and Rescue Dogs (Redog), providing drone teams to help with search-and-rescue. Since then they have assisted with 12 out of 22 Redog missions. "This allows us to have an eye in the air and a nose on the ground," Redog president Romaine Kuonen told AFP. Read more at**:** https://phys.org/news/2017-08-drones-swiss-dogs.html#jCp

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Kalashnikov Group Subsidiary ZALA Aero Develops Counter-UAV System

Kalashnikov Group subsidiary ZALA Aero Group unveiled a man-portable counter-unmanned aerial vehicle (UAV) system at the Army 2017 exhibition, held near Moscow from 22-27 August. The company's REX 1 system is configured as a rifle – it is on the MP-514K rifle – and is equipped with interchangeable jamming units, a sight, foregrip, bipod, and a mount for ancillaries such as a strobe light or a laser beam pointer. A demonstrator of the system was shown fitted with an XPS2-type holographic sight mounted on a Picatinny rail.

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The system is designed to disrupt GPS, GLONASS, Galileo, and BeiDou sateliite navigation signals, radio-frequency communications (900 MHz, 2.4 GHz, and 5.2-5.8 GHz), and mobile networks (GSM, 3G, and LTE). http://uasweekly.com/2017/08/25/kalashnikov-group-subsidiary-zala-aero-develops-counter-uav-system/?utm_medium=push_notification&utm_source=rss&utm_campaign=rss_pushcrew

Flying over fields, AgBot gathers data to help Southern Virginia farmers

Ceillie Simkiss

AXTON — Last August, the Institute for Advanced Learning and Research unveiled a new grant-funded drone called the "AgBot," designed to put an eye in the sky over fields to help local farmers get more data on their farms. The AgBot is a quadcopter drone with a **full-spectrum camera** powerful enough to tell if there's disease on a single leaf on a plant **and a thermal camera** powerful enough to tell if someone in a room full of people is running a fever, said Dr. Scott Lowman, a senior scientist at the Institute.

Since its debut, the AgBot has flown over hundreds of acres, snapping pictures and collecting information on the plants in the fields belonging to dozens of different farmers. Those fields contain such crops as tobacco, wine grapes, soybeans and hops. And the drone's pictures will help farmers determine what they need to do next season. http://www.godanriver.com/news/danville/flying-over-fields-agbot-gathers-data-to-help-southern-virginia/article_b084f0ac-89e2-11e7-a771-4fa7fd9b33fc.html#tncms-source=article-nav-prev

Drone cage in Blacksburg to be playground for researchers

BY JACOB DEMMITT*The Roanoke Times* AUGUST 26, 2017

Virginia Tech's new drone cage is taking shape on the north side of campus, promising students and researchers a place to go when they want to push the boundaries on new technologies outside of what is allowed in public airspace. The facility is under construction now. It will sit near the Duck Pond and will measure 300 feet long, 120 feet wide and 80 feet tall. It will be made of the same netting used at golf course driving ranges. The net will be held up by about 20 poles to form a large box.

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Tech has a history of working with the FAA to get approval for experimental flights, but that process usually takes about six months. With the drone cage, Tech will be able to bypass a lot of that red tape. "(Students and researchers) might be doing rapid prototyping stuff or going out and flying something they built in the lab last night," Blanks said.

The $1 million project will include a small adjacent building, with a classroom and lab where pilots can work on their aircraft before flights. The drone cage will be open to all students and researchers. http://www.charlotteobserver.com/news/science-technology/article169162652.html

Iceye raises $13 million for radar microsatellites

Jeff Foust — August 24, 2017

Iceye plans to launch three SAR microsatellites in the next year as precursors to a larger constellation. Credit: Iceye

WASHINGTON — Finnish company Iceye announced Aug. 23 that it has raised $13 million to further development of **a constellation of synthetic aperture radar (SAR) cubesats**.

Iceye said in a statement that $8.5 million of the new funding came in a financing round led by Draper Nexus, an early-stage venture capital company. The other $4.5 million came from the Finnish Funding Agency for Innovations, known as Tekes. The company has raised $18.7 million to date, including funding from the European Union's Horizon 2020 program.

Last August, it announced an agreement with York Space Systems, a Denver-based smallsat developer, for 10 spacecraft platforms. Iceye plans to later launch a constellation of **18 satellites** in order to provide revisit times of several hours.

Iceye hopes to attract customer interest from several markets for SAR imagery, ranging from urban planning and tracking port activity to environmental and agricultural applications. Iceye is one of several companies proposing constellations of small satellites to provide SAR imagery more frequently and at lower costs than existing, larger SAR satellites. http://spacenews.com/iceye-raises-13-million-for-radar-microsatellites/

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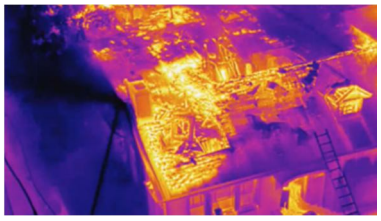
How firefighters are using drones to save lives





Deborah Findling | Jeniece Pettitt 27 Aug 2017

It's not just for fighting fires. SkyFire CEO Matt Sloane said that about **300 to 400 police and fire departments** in the U.S. are now using drones and that number is quickly growing.

"For search and rescues, they set a hundred people out to walk on foot on a grid path," Sloane said. "Now, you can put a drone up in the air with a thermal imaging camera and be able to pick that person out very, very quickly."

Thermal imaging also helps guide firefighters to the hottest part of a fire so they know where to focus their efforts in extinguishing the blaze. For a train derailment, the drone and camera combination can be used to spot leaking chemicals. Thermal cameras on drones tell firefighters what parts of the fire they need to target first.

"The multimillion-dollar a year cost to keep a manned helicopter in the air can be augmented by a couple thousand dollar drone," he said. https://www.cnbc.com/2017/08/26/skyfire-consulting-trains-firefighters-to-use-drones-to-save-lives.html

Drones to figure heavily in Harvey response for insurers Danni Santana August 25 2017

With Hurricane Harvey heading toward the Texas coast, insurers plan on leveraging drones and digital channels to address an expected barrage of claims beyond this weekend.

San Antonio-based USAA is preparing to send out unmanned aerial vehicle systems after the hurricane, operated by a network of pilots available to USAA on demand. "**We have a fleet of**

drones ready to deploy to aide in assessing any damage as a result of Hurricane Harvey," says Rebekah Nelson, a company spokesperson.

Other insures have entered similar partnerships. Farmers recently announced an agreement with Kespry, which will provide the insurer with hardware, software and analytics around drones. Allstate has signed on with EagleView Technologies, and Texas is one of four states where the company has drone operations ready to go. In fact, Allstate has already been settling claims in the state using drones, according to a spokesperson.

Though many major P&C insurers have drone programs in place, the insurers that are lagging behind are likely to see the benefits of investing in the technology as their peers respond to the storm. https://www.dig-in.com/news/drones-to-figure-heavily-in-harvey-response-for-insurers

Shark-detecting drones to patrol Australian beaches

Reuters Staff. Reporting by James Redmayne; Writing by Darren Schuettler

SYDNEY (Reuters) - Drones equipped with a shark detection system powered by artificial intelligence will start patrolling some Australian beaches from next month in a bid to improve safety.

The battery-powered drones will provide a live-video feed to a drone operator who then uses the shark-spotting software to identify sharks in real time and with more accuracy than the human eye.

Studies have shown that people have a 20-30 percent accuracy rate when interpreting data from aerial images to detect shark activity. **Detection software can boost that rate to 90 percent**, said Dr Nabin Sharma, a research associate at the University of Technology Sydney's School of Software.

"It's not about replacing human beings altogether, it's about assisting human beings to get the work done in a better way with more accuracy. That's what the application is meant for," said Sharma. https://www.reuters.com/article/us-australia-sharkdrone-idUSKCN1B51KB

Amazon's Drones May Collect Valuable Data On Their Fly-Overs

Matthew Stern , Contributor AUG 28, 2017

While retailers, carriers and regulators are still trying to figure out the details of safe drone delivery, Amazon.com is already thinking about what data the drones can collect while dropping off packages.

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Amazon has patented technology that allows a drone to scan and collect data from houses it passes on its flight path, according to *Inc.* Among the hypothetical uses for the technology are notifying customers about a damaged roof on their home or recommending a service to attend to sick-looking trees in a yard. The patent suggests text, email and on-site notification as viable ways to communicate the findings to the customer.


Source: Amazon.com Inc. via Bloomberg

It's not hard to imagine this technology collecting more in-depth data at the point of drop-off or even by peering through windows, or delivering recommendations based on fly-by data to in-home Alexa devices.

"**Moral considerations aside, there's massive potential in this for Amazon**," said Jett McCandless, founder and CEO of project44. "Amazon can leverage information about your vehicles, the exterior of your home and any property visible from the outside, and use that to market related products to people. They can even obtain information about when people are home, when they are outside, etc. There's no telling what other ideas they'll come up with as they bring in rounds of data and begin analyzing it. https://www.forbes.com/sites/retailwire/2017/08/28/amazons-drones-may-collect-valuable-data-on-their-fly-overs/#4909f30d6cbe

50 stunning drone photos that will make you look at the world from a different angle

Bobbie Edsor Aug. 28, 2017


Aerial view of old city of Dubrovnik, Croatia.Shutterstock/Paul Prescott

Paul Brennan, Vice-President of content operations at the photography and stock-image database Shutterstock, told Business Insider that drones present "a huge opportunity" for creators to explore environments that would otherwise be unquestionable.

Business Insider has compiled **a list of the most breathtaking photographs taken by drones** from Shutterstock's vast database that prove that the sky really is the limit when it looking at things from

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a different angle. The photos include everything from landmarks and everyday scenes we all recognise to rarely explored landscapes.

Keep scrolling to see 50 breathtaking photographs taken by drones across the world.
http://www.businessinsider.com/stunning-drone-photos-2017-8/#watch-parasols-pop-up-around-tikvesh-lake-in-macedonia-1

A quadrocopter could be used to explore Saturn's largest moon Timothy J. Seppala

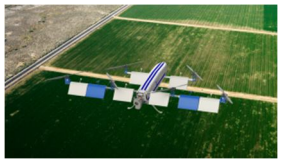
In 2014, NASA proposed using drones to explore Saturn's largest moon, Titan. Three years later, Johns Hopkins Applied Physics Lab has a pitch for the aeronautics agency. Like NASA suggested a few years ago, Hopkins' craft is a quadrocopter. The school said **that its Dragonfly drone is ideal for exploring the moon given its dense atmosphere and weak gravity.** "A human could actually strap on wings, flap their arms and fly," Peter Bedini says.

"Mass spectrometry would reveal the composition of the surface and the atmosphere," the school writes. "Gamma-ray spectrometry would measure the composition of the shallow subsurface. Meteorology and geophysics sensors would measure atmospheric conditions such as wind, pressure, temperature and other factors, as well as seismic activity. Additionally, cameras would characterize the geologic and physical nature of the moon's surface and help find subsequent landing sites."

The Dragonfly will maintain power throughout its missions with a Multi-Mission Radioisotope Thermoelectric Generator. Sometime later this fall, NASA will make its pick for the New Frontiers mission expected to launch in the middle of 2019. See the presentation at Johns Hopkins

http://www.msn.com/en-us/news/technology/a-quadrocopter-could-be-used-to-explore-saturns-largest-moon/ar-AAqOHhf?li=AA571q

AAC Releases Long Endurance Hybrid VTOL UAS 28 Aug 2017



Advanced Aircraft Company (AAC) has confirmed that **customer deliveries** of the new 'Hercules' unmanned aerial system (UAS) **will begin in December 2017**.

The Hercules is a unique long endurance multi-rotor UAS that incorporates two new technologies: the aircraft incorporates a hybrid electric propulsion system and has patent-pending aerodynamic design improvements. These two technologies enable the aircraft to **fly up to 3.5 hours or carry a**

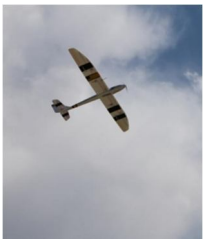
four pound payload for two hours. The aircraft has a 36 pound gross weight and is intended for FAA Part 107 operations. Hercules is useful for many applications that benefit from long endurance such as precision agriculture, mapping, first responders, and infrastructure inspection.

Hercules offers unique advantages to UAS fleet operators: increase in flight time dramatically improves the utilization of the workforce, enabling up to 45% reduction in cost per acre. Additionally, the increased payload capacity avoids repeat overflights that require swapping payloads needed for complete data acquisition. The logistics footprint of the system is small because there is no need for a generator, battery charger, or extra batteries – simply add more gas to the aircraft and takeoff again – three gallons of fuel will power the aircraft for a whole day. http://www.unmannedsystemstechnology.com/2017/08/aac-releases-long-endurance-hybrid-vtol-uas/

30Aug17

NEVADA UAS TEST SITE AND MICROSOFT TEST ARTIFICIAL INTELLIGENCE IN MICROSOFT'S UAS AUVSI NEWS AUG 23, 2017

The Nevada Governor's Office of Economic Development (GOED) and the Nevada Institute for Autonomous Systems (NIAS) have teamed up with Microsoft's UAS research team to **test Artificial Intelligence** (AI) in Microsoft's sailplane.



The sailplane being tested, which is 16.5 feet and weighs 12.5 pounds, relies on a battery to "run onboard computational equipment and controls," including the rudder, and radios to communicate with the ground. The UAS also has a motor, which allows a pilot to take over manual operation if and when necessary. During this set of tests though, the UAS demonstrated its ability to **operate on its own**, as it found and used thermals to travel without the help of the motor or a person.

"Innovative AI technology like what Microsoft tested with NIAS is clearly where the most dramatic global UAS Industry disruptions will occur," **says Dr. Chris Walach, Director of the FAA-designated Nevada UAS Test Site**. This is one of the most exciting developments I have seen over the past several years in Nevada and globally." http://www.auvsi.org/industry-news/nevada-uas-test-site-and-microsoft-test-artificial-intelligence-microsoft%E2%80%99s-uas

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Drone Demos Powerline Monitoring Using Rockwell Collins Data Link S.L. Fuller | August 29, 2017


The industry has taken another step toward safe beyond-line-of-sight unmanned aircraft system (UAS) operations. Rockwell Collins said it, along with Black & Veatch, successfully demonstrated a flight of this nature along nearly **10 miles of powerline infrastructure** with a Pulse Aerospace Vapor 55 drone.

"Monitoring critical infrastructure, particularly those in rural areas beyond line of sight, can be done much more efficiently and effectively through the use of UAS technology," said Ken Schreder, VP of strategic programs, information management services at Rockwell Collins. "We've created a mobile beyond-line-of-sight system with networked command and control capability, which enables us to demonstrate the benefits to infrastructure customers."
http://www.aviationtoday.com/2017/08/29/drone-demos-blos-power-line-monitoring-operation-using-rockwell-collins-data-link/

Funding approved to plan 'Drone Zone' in former Covington school building

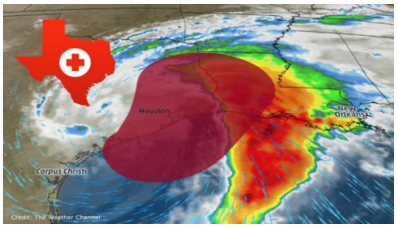
laurence.hammack @roanoke.com 981-3239


A quad race drone makes it way through hoops suspended from trees in the woods during the Flying Circus First Person View Festival on May 20. Pilots looked through FPV goggles to see from the perspective of their drone as they raced laps through the woods. The Roanoke Times | File 2017

Plans to convert a former primary school in Covington to a drone research and recreational facility got off the ground Tuesday with the announcement of **$100,000 in federal funding**. The grant from the Appalachian Regional Commission will be **matched with $100,000 in local money** to complete a feasibility study for what is being called the **Alleghany Highlands Drone Zone**.

Located in the former Edgemont Primary School, the facility would serve as a regional incubator for an emerging industry in which small, unmanned aircraft are used for a variety of purposes, including delivering packages and taking aerial photographs.

The startup funds will also cover design, marketing and business plans for the facility. Renovation of the city-owned school building is expected to create space for about 12 businesses, with three to five opening each year. http://www.roanoke.com/news/virginia/funding-approved-to-plan-drone-zone-in-former-covington-school/article_8372e563-971b-55b0-8041-5f7b150aabc0.html

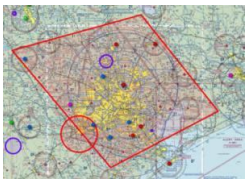
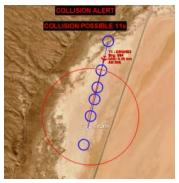


August 30, 2017

Vigilant Aerospace Joins Red Cross UAS Team in Houston to Provide Airspace Safety

Vigilant Aerospace is providing the Red Cross unmanned aircraft team with FlightHorizon to provide air safety and situational awareness in support of disaster relief operations after Tropical Storm Harvey hit Houston, Texas.

Vigilant Aerospace has joined the Red Cross' unmanned aircraft response team in Houston, Texas to provide air safety, situational awareness, and detect-and-avoid services for unmanned aircraft operations as flooding from Tropical Storm Harvey continues to devastate the area.

"The big advantage of the FlightHorizon approach in incident response is that it is highly portable, can be run on a laptop with a small antenna to cover a large operational area and can provide immediate situational awareness for most aircraft. Because it uses existing air traffic control protocols and infrastructure, it requires no coordination or authorization to provide instantaneous integration for unmanned aircraft into the airspace," said Epperson.

FlightHorizon software uses data from standard aviation transponders and radar, when available, to provide a 2D map-based view and 3D synthetic cockpit view of national airspace and full sensor fusion across aviation transponders, radars and online data feeds. The system is designed to help operators maintain flight safety, provide aircraft alerts and warnings, and provide specific collision avoidance commands, when necessary. http://uasweekly.com/2017/08/30/vigilant-aerospace-joins-red-cross-uas-team-houston-provide-airspace-safety/?utm_medium=push_notification&utm_source=rss&utm_campaign=rss_pushcrew

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Commercial Drones Face Unprecedented Test in Harvey's Destructive Wake Aug. 30, 2017

Houses and cars are seen partially submerged by flood waters from tropical storm Harvey in east Houston, Texas, U.S., August 28, 2017. REUTERS/Jonathan Bachman Reuters

By Tim McLaughlin and Karl Plume

BOSTON/CHICAGO (Reuters) - Fleets of commercial drones are primed to hover over the destruction from Tropical Storm Harvey in an unprecedented test of unmanned aircraft's ability to assess billions of dollars in damage for the insurance industry and accelerate payouts for harried policyholders.

AT&T Inc said on Wednesday that it had begun using a fleet of 25 drones to look at cellphone towers in southeastern Texas, including Corpus Christi, that were hit by the hurricane.

Allstate Corp , the second-largest property insurer in Texas behind State Farm, expects its drone fleet to make at least thousands of flights a week in the damaged areas once its claims processing becomes fully operational, company spokesman Justin Herndon said.

Farmers Insurance, the third-largest property insurer in Texas and part of Zurich Insurance Group AG , plans to use Kespry drones to assess damage in a joint effort with on-the-ground claims adjusters. Farmers Insurance said a drone could help a claims **adjuster process three houses in an hour. Without a drone, only about three houses could be processed in a day**.
https://www.usnews.com/news/top-news/articles/2017-08-30/commercial-drones-face-unprecedented-test-in-harveys-destructive-wake

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Amazon's talking delivery drone would ask for help if it fell out of the sky Ethan Baron / August 29, 2017

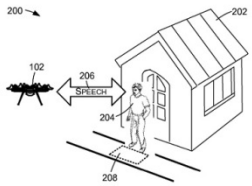

FIG. 2

What's nice about Amazon's new drone patent is the prospect of having a little chat with your aerial-delivery vehicle when it's dropping off your new camera. What's not so nice is Amazon's recognition that drones carrying consumer goods are going to be falling out of the sky.

The Seattle e-commerce giant received a patent Aug. 29 for drones, aka unmanned aerial vehicles (UAVs) that could "**conduct a speech dialog** with a nearby person in order to request information and/or answer questions." http://www.siliconbeat.com/2017/08/29/amazons-talking-delivery-drone-ask-help-fell-sky/

31Aug17

Drone Partnerships Gone Wild Frank Schrothon: August 30, 2017

Guest post by Drone Industry Insights —

The last year in the drone industry moved at incredible pace – especially when it comes to strategic drone partnerships. We frequently provided updates about partnerships in the past. Now, why is this so important? Drone companies (hardware and software manufacturers, and service providers) are constantly expanding their product/service portfolio and interdisciplinary expertise. This is extremely interesting because it unveils the company's strategic alignment.

Looking at the last year, **the number of strategic partnerships increased by 24%** (42 to 55) compared to the same period of the previous year which shows the increasing maturity of the industry. Furthermore, the elements changed: partnerships with software companies (2016: 20% -> 2017: 33%) and services (2016: 29% -> 2017: 31%) increased. The role of hardware is still very important (2016: 51% -> 2017: 36%), but the industry understood that it cannot stand alone anymore – customers look for **easy-to-use end-to-end solutions and this involves software and service**. https://dronelife.com/2017/08/30/one-year-drone-partnerships/

Drone Technology Helps Fight Wildfires in a Totally New Way Jeremiah Karpowicz

News about Insitu, FireWhat and Esri joining forces to fight fire was a big deal, not just because of what this partnership could mean for these companies, but because of what it will mean for fire incident commanders.

"I was a career fireman who left the industry to solve problems I faced on a daily basis," Sam Lanier, CEO of FireWhat, told Commercial UAV News. "One of the biggest problems I saw was the lack of technology adoption, when every firefighter carried a cell phone in their pocket. In 2015, they forged a strategic alliance with the Executive Team of Esri that has helped them secure partnerships with HP and now Insitu.

"As part of our work with Insitu, for the first time ever, real-time imagery is being piped into our GISDirect FireLine Data Analytics system," Lanier explained. "The system allows us to control the turret sensor payload of the drone, and rapidly digest the imagery, to post process the data on a map. We can then **deliver that info to the palm of a firefighter's hand, in near real-time**."
https://www.expouav.com/news/latest/drone-technology-helps-fight-wildfires/

UK drone firm wins the backing of Japanese industrial giant Mitsui

Courtney Goldsmith

Sky Futures uses drones to inspect industrial equipment like oil rigs (Source: Getty)

A UK-based drone company is set to receive a **$4m** (£3m) investment from Japanese conglomerate Mitsui.

Sky Futures provides drone-based industrial inspection technology. With drones, companies can more safely inspect industrial equipment like oil rigs. It will expand the use of Sky Futures' drone-based technology to Mitsui's global network in the energy, marine and infrastructure sectors.

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"This partnership with Mitsui brings industrial drone inspection into the mainstream. Demand for drone survey software is rocketing as a result of **the shift to AI [artificial intelligence] and machine learning** that is fundamentally changing the way inspection is done," said James Harrison, chief executive at Sky Futures.

The Middlesex-based company said using drones in place of humans is potentially more cost effective. In some situations, like inspecting gas flares on oil rigs, firms can avoid shut downs that would cost them millions per day by deploying drones. http://www.cityam.com/271080/uk-drone-firm-wins-backing-japanese-industrial-giant-mitsui

Northrop Grumman expansion brings jobs to Grand Sky facility Patrick C. Miller | August 30, 2017

Northrop Grumman is adding a 35,000-square-foot hangar to its facility at the Grand Sky UAS Business and Aviation adjacent to the Grand Forks Air Force base in North Dakota. PHOTO: UAS MAGAZINE

More jobs will be coming to North Dakota as a result of Northrup Grumman's expansion of facilities at the Grand Sky Unmanned Aerial Systems (UAS) Business and Aviation Park adjacent to the Grand Forks Air Force Base.

Last week, the company started work on a 35,000-square-foot hanger capable of housing two Global Hawk-sized aircraft. In April, Northrop Grumman dedicated a 36,000-square-foot building at Grand Sky with office, classroom and lab space dedicated to fostering autonomous systems and other capabilities. The company plans to **employ up to 100 people** at the site before year's end.

Hambleton and Mike Lyons, Global Hawk business development lead, spoke in Grand Forks last week during the 11th Annual UAS Summit & Expo about Northrop Grumman's plans for the Grand Sky facility and work with the Air Force.

Hambleton believes the ability to **conduct beyond visual line of sight operations** from the Grand Sky facility will prove attractive to Northrop Grumman's customers.

"Ideally, the beyond visual line of sight capability that the Grand Sky Development Co. and the (Northern Plains) UAS Test Site are working on with the FAA is going to enable us to conduct safe flight through the civil airspace without having to impose flight restrictions and also **not require a**

chase plane," he explained. http://uasmagazine.com/articles/1741/northrop-grumman-expansion-brings-jobs-to-grand-sky-facility

1Sep17

This Is Why a Beautiful Sculpture Will Be Launched Into Outer Space

Tim Nelson Architectural Digest•August 31, 2017

Orbital Reflector plans to boldly go where no other sculpture has gone before—and make art history in the process

It's not often that we pause to think about the many satellites that roam outer space. An ambitious project from artist Trevor Paglen aims to change that, **reimagining the aesthetics of aerospace engineering** and our relationship with the cosmos in the process. For his work titled *Orbital Reflector*, a diamond-shaped silver balloon measuring 100 feet in length will be packed into a small, box-like structure known as a **CubeSat** and launched out of Earth's atmosphere via a SpaceX Falcon 9 rocket. Once it's about 350 miles from Earth, the CubeSat will release the sculpture. The mirror-like sculpture will circle the globe for a period of two months, reflecting light as brightly as the Big Dipper does back to Earth.

Since dreaming up the concept nearly a decade ago, Paglen has partnered with seasoned aerospace expert Zia Oboodiyat to handle the technical aspects of getting and keeping an inflatable object in orbit. The Nevada Museum of Art is a major patron, and Paglen launched a Kickstarter to raise the final $70,000 out of a total $1.3 million in funds. https://www.yahoo.com/news/why-beautiful-sculpture-launched-outer-164054916.html

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Drones prove useful to Harvey recovery with restrictions Bart Jansen, USA TODAY
Aug. 31, 2017


(Photo: Courtney Sacco and Matt Woolbright/Caller-Times)

Hurricane Harvey and its aftermath are illustrating the value and perils of drones. Remote-controlled aircraft have been promoted for years for conducting dangerous missions such as inspecting damaged and flooded buildings more safely than people can.

By Thursday, the Federal Aviation Administration has authorized **43 drone operators** in Harvey's wake, for recovery efforts and for news organizations covering it, including the USA TODAY Network.

But the FAA has also prohibited private drone pilots from flying in a broad area around Houston to avoid areas where emergency aircraft such as rescue helicopters are plucking people from rooftops or searching for survivors. The FAA is "targeting the responsible members of the various communities who are responding to this type of catastrophe, whether it's the first responders, the insurance industry or the news media, said Mark Dombroff, a partner at Denton's aviation-law practice. "This is an object lesson in the utility, the usefulness, the effectiveness of drones." https://www.usatoday.com/story/news/2017/08/31/drones-contribute-harvey-recovery-within-limits/622551001/

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