



UAS and SmallSat Weekly News

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Knowledge Base Presented By Pix4D “Drone-mapping Hits The Road” March 23, 2018 Knowledge Base



How drones and photogrammetry software are powering the shift from repairs & maintenance departments to smart infrastructure asset management organizations

The responsibility of managing highway assets is shifting from reactive maintenance and repair organizations to dynamic, strategic planning agencies. Technology drivers such as the advent of drones and photogrammetry software in the geospatial industry are driving that change. The combination of these technologies is commonly referred to as **drone-mapping** and enables organizations to tackle operational challenges—allowing them to perform frequent inspections and create up-to-date, digital asset databases.

Agencies need to know the current (and future) technical condition and performance of the asset to balance intervention cost and impact. From an operational point of view, keeping an up-to-date database and performing periodic surveys of roads, bridges and other civil engineering objects have traditionally been considered costly and time-consuming. Using drones as the data capture tool and photogrammetry software to transform this data into digital spatial models addresses these operational blockers.

<http://uasweekly.com/2018/03/23/knowledge-base-presented-by-pix4d-drone-mapping-hits-the-road/>

DJI and Skycatch Announce Global Agreement to Deliver 1,000 Industrial Drones for Komatsu March 22, 2018 News

Commercial drone data company Skycatch and DJI have extended their [partnership](#) to manufacture and deliver a fleet of 1,000 high-precision drones for Komatsu Smart Construction. This represents **the largest commercial drone order in history**. Each drone is manufactured by DJI and outfitted with specialized Skycatch technology, and is the first time DJI has manufactured a custom drone for a partner.

The Skycatch Explore1 drone autonomously flies over job sites to create highly accurate 3D site maps and models and will be deployed on Komatsu job sites. This map data will be used for



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Komatsu Smart Construction's new data service that enables robotic earth moving equipment, used in the earthwork stage of the construction process, to correctly dig, bulldoze, and grade land **autonomously according to digital construction plans**.

"Conducting a site survey using a drone used to take hours. However, by implementing Explore1, users can carry out surveying quickly and easily. Now it is possible to **perform drone surveying every day**. **Taking off, landing and flight route setting are all automated**. Ground Control Points (GCPs) are no longer needed. 3D data is immediately generated and an entire construction site can be visually checked with the 3D map. The Explore1 is **a true game changer** for the construction site," said Chikashi Shike, Executive Office of Smart Construction Division at Komatsu. http://uasweekly.com/2018/03/22/dji-and-skycatch-announce-global-agreement-to-deliver-1000-industrial-drones-for-komatsu/?utm_medium=push_notification&utm_source=rss&utm_campaign=rss_pushcrew

AirMap and Skyward Bring Low Altitude Authorization and Notification Capability to Commercial Drone Operations

Near real-time processing of FAA airspace authorizations now available on the DroneDeploy App Market



If you've ever been faced with flying a mission near a controlled airspace, you know the frustration. The lengthy FAA authorization form. The 90-day backlog. Drones are supposed to streamline your operations and give you real-time data, but there's nothing streamlined about a 90-day wait period just to fly within five miles of an airport.

The good news: this frustrating backlog is finally coming to an end. DroneDeploy users can now skip the 90-day wait and apply for near real-time airspace authorization from directly within the DroneDeploy platform.

This month, DroneDeploy partners AirMap and Skyward are bringing this new capability to the industry, allowing you to take full advantage of LAANC — the FAA's new Low-Altitude Authorization and Notification Capability initiative.

Partnering with AirMap, DroneDeploy is one of early adopters to make the move ahead of the announcement. <https://blog.dronedeploy.com/airmap-and-skyward-bring-low-altitude-authorization-and-notification-capability-laanc-to->



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[c98aaa74da4d?elqTrackId=a9e9c6dcc3ce4c67be5d4bfd3b19da1a&elq=493cfcee990a4a4ab5d77d060fe851cb&elqaid=212&elqat=1&elqCampaignId=210](https://www.cbc.ca/news/canada/ottawa/first-responders-pilot-project-drones-line-of-sight-1.4583132)

First responders and private firms will test flying drones out of sight Ashley Burke, CBC News Mar 23, 2018

First responders want to fly drones over highways to drop off defibrillators before an



ambulance arrives at an accident. Police are hoping to use the devices for surveillance from afar.

Companies are eager to use drones to survey long stretches of pipelines, monitor vast areas of wildlife or drop of packages to doorsteps.

In April, first responders will test flying drones up to two nautical miles from the operator. During the **week of trials in Orillia, Ont.**, pilots will have to prove they can safely navigate their drones around trees, buildings and other objects in rural and urban settings.

If first responders prove it's safe, Transport Canada may grant a special flight operations certificate so these paramedic and police forces can continue testing on the job.



Paramedics in Renfrew have equipped their drones to drop defibrillators. (Ashley Burke/CBC)

Leahey said flying out of sight could help when paramedics can't easily access a patient during an emergency. "They may be behind a treeline, they may be across a creek, at the bottom of a ravine where we can't get down," said Leahey. "The drone is our eyes ... We can drop life-saving equipment, first-aid kits, life jackets. Sometimes it's as simple as a rope if someone's out on the ice."

For RCMP it could mean using a drone for search and rescue, surveillance at major events and helping to identify suspicious objects. Along with Transport Canada's own research at drone testing ranges in Alberta and Quebec, the department is fielding applications from private companies. <http://www.cbc.ca/news/canada/ottawa/first-responders-pilot-project-drones-line-of-sight-1.4583132>



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General Electric and Northrop Grumman Will Put a Drone On Every Boat The Motley Fool, Rich Smith

What if there were a way to turn every non-submarine warship in the Navy into an ad hoc aircraft carrier? There may *be* a way -- and its name is TERN, short for "[Tactically Exploited Reconnaissance Node](#)."



[The TERN program](#) is a project run by Northrop Grumman to design a "tail-sitting, flying-wing aircraft with a twin contra-rotating, nose-mounted propulsion system," able to launch from and land on a warship deck "like a helicopter," but transition to "wing-borne flight" like an airplane when on-mission.

In January, General Electric participated in test flights of TERN's power system in the California desert. In future months, additional ground tests and flight tests of the engine, integrated into a TERN prototype, will take place -- followed by at-sea test flights, launches, and landings.

TERN-ing battleships into aircraft carriers

Once fully developed and certified, Northrop's TERN is likely to take the shape of an equilateral triangular measuring 40 feet on a side, and topped by two 10-foot counter-rotating rotors, both driven by General Electric's engine. TERN will be able to carry as much as **600 pounds of ordnance** -- sufficient for six Hellfire missiles, for example -- and have enough endurance to carry out strike missions as far away as **600 miles from base**. <https://www.msn.com/en-us/travel/news/general-electric-and-northrop-grumman-will-put-a-drone-on-every-boat/ar-BBKAYJp>

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Future Cities Could Be Designed for Drone Delivery Lauren Sigfusson | March 23, 2018



These could be the delivery drones of the future.

PriestmanGoode, an industrial design agency based in London, released the trailer for "Elevation" — a film of a drone delivery concept — at the [GREAT Festival of Innovation](#) in Hong Kong earlier this week. The delivery system, called Dragonfly, is seamlessly integrated into the cities of the future and serves as the main method of delivery.



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The robo-carriers tote packages across **a city that's been designed for them**, much as the infrastructure of today is built for cars. The drones take off from boats, pick up and transfer packages while flying, and dock on the side of the buildings.

Yes, it's just a concept video, but some of these ideas have been patented by big tech companies. Amazon already thought that drones might need a place to recharge or exchange packages, patenting [drone perches](#) that could be installed on electric poles and other tall structures in a city. The company also foresees the need for [mobile maintenance facilities](#) that could include boats. The full, 20-minute short film "Elevation" will be released in May. <http://blogs.discovermagazine.com/drone360/2018/03/23/drone-delivery-video/#.WrZPIC7wZ0x>

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Lockheed's Skunk Works reveals missing link in secret UAV history

In 2001, Lockheed Martin's Skunk Works secretly flew a flying wing unmanned air vehicle (UAV) with a roughly 9m (30ft) wingspan with modular wings and a bulbous fuselage as a technology demonstrator for a family of aircraft.

As the company prepares to celebrate the **Skunk Works' 75th anniversary** in June, Lockheed decided to reveal the existence of the formerly secret project at the Los Angeles County air show on 24 March in Lancaster, California. Lockheed's "X-44A" greeted visitors at the entrance of the five-year-old local event near Edwards AFB, a storied flight test centre for the US Air Force and NASA.

Although the project's existence is no longer a secret, Lockheed is not yet prepared to offer many details beyond the year of its first flight and its role as a demonstrator for a family of UAVs.



The project bears the hallmarks of many Skunk Works projects, including a name possibly intended to cause confusion. For two decades, the X-44A designation was thought to be assigned only to a NASA proposal for an X-plane. NASA's late-1990s proposal, never consummated, called for testing a Lockheed F-22 with a trapezoidal wing and no vertical tails.



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Why the X-44A designation was secretly reassigned to the Skunk Works UAV project is not clear. Lockheed's confirmation and unveiling came nearly two months after Tyler Rogoway, a journalist for the The War Zone blog, first reported the X-44A's alternative identity as a flying wing demonstrator. <https://www.flightglobal.com/news/articles/lockheeds-skunk-works-reveals-missing-link-in-secre-447041/>

Inspection Drones Detect Unmarked Gas Wells for PA Highway Project Jason

Reagan March 25, 2018



[US Aerial Video Inc.](#) (UAV) recently finished a six-month proof-of-concept project for the Pennsylvania Turnpike Commission in partnership with the National Energy Technology Laboratory.

Using a magnetometer attached to a drone, technicians located several abandoned and unmarked gas wells across a swathe of southwestern Pennsylvania. Locating such potential trouble spots is good news for the Turnpike Commission as it plans to develop a highway through the wooded area.

"The drone surveyed the ground surface and detected wells by sensing perturbation with the earth's magnetic field caused by vertical steel well casing. That allowed us to map the wells prior to the contractor randomly discovering them – **saving the project money**," Ken Heirendt, Geo-Technical Engineering Manager of the PA Turnpike Commission, said.

The drone project collected more than 125-line miles of data over five regions along the proposed corridor. In one half-mile square grid alone, the drone **found 41 potential targets** – five of which turned out to be unmarked gas wells. <https://dronelife.com/2018/03/25/inspection-drones-detect-unmarked-gas-wells-pa-highway-project/>

Scaled Composites unveils flying wing drone to be used as technology testbed 16

MARCH, 2018 FLIGHTGLOBAL.COM GARRETT REIM LOS ANGELES



Model 406, also known as Ardent Dragon, has a 4.57m (15ft) wingspan and is remote-controlled. The unmanned aerial vehicle is built to **demonstrate** the effectiveness of Scaled Composites' **rapid prototyping** and engineering processes.

The flying-wing aircraft was developed over 10 weeks last summer from a clean-sheet design and first flew on an undisclosed date in 2017. Scaled Composites is known for its rapid



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development of new designs, using a design-build-test process. The company has designed, built and flown several dozen aircraft since its founding in 1982.

<https://www.flightglobal.com/news/articles/scaled-composites-unveils-flying-wing-drone-to-be-us-446848/>

Soar Dragon UAVs Deploy to Yishuntun Airbase March 23, 2018



New satellite imagery acquired on 04FEB2018 by [DigitalGlobe](#) shows that China has deployed the [Guizhou Aviation Industry Group Xianglong \(Soar Dragon\)](#) high altitude long endurance unmanned aerial vehicle to Yishuntun airbase in [Jilin province](#). The platform, identified by its unique box wing design and ‘V’ shaped vertical stabilizers, is often considered **China's answer** to the U.S.-built [Global Hawk](#).

Imagery shows two Xianglong parked on the apron not far from two portable aircraft shelters. The mobile support shelters were erected in late December 2017. The platform’s associated ground control station and primary satellite link were located east of the runway on a new hardstand. The UAVs are the only aircraft that have been observed at the airfield. According to *Jane’s Unmanned Aerial Vehicles and Targets*, the platform has a cruising speed around 405 kt (about 700 km/h), an operating altitude of 18,000 m, and a range of 3,780 n miles (about 7,000 km). <https://offiziere.ch/?p=33037>

Drones join war on songbird trappers at Cyprus military bases Ben Farmer, defence correspondent 24 MARCH 2018



A Blackcap in a mist net on a UK military base in Cyprus

Police on British military bases in Cyprus have used drones and night vision goggles to turn the tide in a campaign against illegal trappers catching and killing hundreds of thousands of songbirds.

Small migratory birds such as blackcaps are considered a traditional delicacy by some Cypriots and sophisticated trapping feeds a **multimillion-pound illicit trade**. “Thanks to the fantastic



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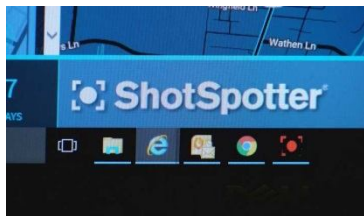
work of our Armed Forces and the Sovereign Base Police there has been a 70 per cent fall in the number of birds killed in the Sovereign Base Areas.

Trappers use fine mist nets strung up in acacia trees or glue coated sticks to trap the birds which are then served up as the local dish ambelopoulia. One small mist net alone traps hundreds of birds at a time, and blackcaps sell for up to £65 per dozen. The RSPB has estimated that more than 260,000 birds such as black caps and robins were trapped and killed last autumn at the British territory, **down from the previous year's estimate of 880,000.**

<https://www.telegraph.co.uk/news/2018/03/24/drones-join-war-songbird-trappers-cyprus-military-bases/>

Louisville selected to test drone technology with ShotSpotter March 19th 2018

Connie Leonard, Anchor/Reporter



The gunshot detection system uses sensors to find the location of gunfire within seconds.

LOUISVILLE, KY (WAVE) - The city of Louisville has been chosen to participate in a test that could lead to more crimes being solved using ShotSpotter technology.

The Bloomberg contest provides up to \$100,000 for the testing. More than 300 cities applied, but only 35 were chosen. Louisville and Hartford, Conn., are the two cities that will test ShotSpotter technology innovations.

Louisville's proposal looks like this: After the ShotSpotters notify police of gunshots, drones with cameras would be dispatched to those areas **within 90 seconds** to be able to help investigators with evidence like cars or people fleeing crime scenes.

The drones they're looking at would be able to operate beyond visual line of sight, so they would know how to fly to the coordinates at the right elevation. Real-time crime center analysts will be the operators. <http://www.wave3.com/story/37760050/louisville-selected-to-test-drone-technology-with-shotspotter>

Skycision Raises \$1.1M in Seed Funding [USA](#) [March 19, 2018](#)



Skycision, a Watsonville, CA-based data platform that leverages drone and satellite imagery for farmers to manage crops, raised \$1.1m in seed funding. The round was led by Innova Memphis, with participation from Dane Scurich, Scurich



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Berry Farms and Pete Nelson with AgLaunch. The company intends to use the funds to expand operations and develop its solution.

Founded in 2015 by CEO Brendan Carroll, Skycision provides a data platform that leverages drone and satellite imagery to give farmers **crop stress detection** and analysis to enhance their yield potential and reduce the risk of loss. <http://www.finsmes.com/2018/03/skycision-raises-1-1m-in-seed-funding.html>

Study: Half of Drone Flights To Be Autonomous by 2022 [Mark Huber](#) March 22, 2018

More than half of global commercial UAS flights will be conducted autonomously by 2022, according to a new study released today by consulting firm Frost & Sullivan.

Frost & Sullivan sees North America as the leading market, followed closely by the Asia-Pacific region. "The UAS market is becoming an ecosystem focused on information and value-added services, where the **drone is a tool** acting as a cog **in the big data machine**," said Frost & Sullivan aerospace, defense, and security research director Michael Blades. "Success in this ecosystem will be achieved by companies that can safely, quickly, and inexpensively provide high-grade data/information for real-time decision making."

The study says fundamental transformations that will disrupt the status quo and create new opportunities for industry growth include a drop in demand for remote pilots to operate drones on site; new regulations, infrastructure, and public perception with regard to drone delivery; and the likelihood that, by 2022, **the UAS will mimic the cellphone industry with few hardware providers and myriad open-source software and sensor providers** that cater to specific applications. <https://www.ainonline.com/aviation-news/business-aviation/2018-03-22/study-half-drone-flights-be-autonomous-2022>

Self-flying drones may be the next emergency responders Talia Kirkland | Fox News

"**Swarm**" **drones**, which can navigate on their own and coordinate with one another using sophisticated metric technology, **could become the next fleet of emergency responders**.

These devices can function as a rescue unit to investigate an active crime scene or natural disaster – capturing images and other data that could help law enforcement plan next steps from a safe distance, said Penn researcher and team member Giuseppe Loianno.



While many commercial drones rely on satellite signals and can only function outdoors, these drones use algorithms that allow them to



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perceive their surroundings by means of onboard cameras and inertial measurement units.

"Smartphone" technology developed by Qualcomm is installed in each drone, allowing a GPS receiver to work when GPS-signals are unavailable, such as in tunnels, inside buildings, or when electronic interference is present.



Swarm drones can communicate in groups as small as twelve to as large as one thousand (or more) without affecting the speed and functionality. Loiano calls this research **unprecedented**. They are now testing 12 drones, but he said the swarm drones could soon cluster in

numbers much higher. <http://www.foxnews.com/tech/2018/03/22/self-flying-drones-may-be-next-emergency-responders.html>

In Ivory Coast, 'drone academy' offers youth the chance to soar 2018-03-26



The aim for the Ivorian Electricity Company -- which is majority-owned by France's Eranove Group, a key provider of water and electricity in West Africa -- is to train around 20 local pilots to inspect its high-voltage lines which criss-cross the country, stretching more than 25 000km.

"We have a lot of problems with vegetation, we need to clear it all the time and it's difficult because it's all across the whole country," explains

Benjamin Mathon, a pilot who is in charge of CIE's **drone and youth training programme**.

After overflying an area with a drone equipped with cameras and thermal and laser sensors, "we use artificial intelligence programmes which analyse the images for any defects, a rusty bolt on a pylon, a damaged cable," explains Mathon.

But the drone academy is not just serving the electricity sector: it is **open to any business in West Africa** which could benefit from the technology, from farming to mining, says Paul Ginies, director of the Centre for Electrical Professions, CIE's training division.

"I'm sure that young Africans are going to grab hold of this and surprise us by developing applications which we have not thought of. It's their generation."

<https://www.news24.com/Africa/News/in-ivory-coast-drone-academy-offers-youth-the-chance-to-soar-20180325>



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NASA UTM Program Completes TCL 3 Testing at the FAA-Designated Nevada UAS Test Site



The Nevada Institute for Autonomous Systems, who manages the Nevada UAS Test Sites, and its NASA Unmanned Traffic Management partners flew multiple Unmanned Aerial Systems over a week-long testing period at the Nevada UAS Test Site at the Reno-Stead Airport. The testing focused on airspace management technologies that will **enable the safe integration of UAS into the NAS.**

NASA provided a Flight Information Management System research platform that will serve as a prototype for the FAA to use to coordinate with Unmanned Service Supplier's operating throughout the nation. Research areas of emphasis during the testing included UAS ground control interfacing to locally manage operations, communication, navigation, surveillance, human factors, data exchange, network solutions, and BVLOS architecture.

On media day, a team from the Reno Fire Department simulated an incident with a victim experiencing severe blood loss and who needed an immediate transfusion. A multi-rotor UAS from Drone America was equipped with a container which held an actual packet of blood to be transported via drone. http://uasweekly.com/2018/03/26/nasa-utm-program-completes-tcl-3-testing-at-the-faa-designated-nevada-uas-test-site/?utm_source=newsletter&utm_medium=email&utm_campaign=uasweekly_newsletter_2018_03_26&utm_term=2018-03-26

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Golden drone company raises \$3.4 million Ben Miller Mar 26, 2018



A Golden-based drone company — Juniper Unmanned — said it's raised \$3.4 million in a Series A preferred equity financing round. The company said the financing round was led by Chicago-based MARCorp Financial.

"Using high-quality imagery and data collected via unmanned aircraft systems, our experts conduct full-spectrum analysis using statistical software so we can provide our customers timely and actionable data to improve the speed, cost-effectiveness, and safety of their operations," said [Jeff Cozart](#), CEO, in a statement.



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In November, Cozart, who's also an aviation lecturer at MSU-Denver, [told the Denver Business Journal](#) that "Juniper Unmanned has performed unmanned aircraft missions for engineering companies **on six of the world's seven continents**. His drones collect millions of data points and feed those back to the computers operating heavy machinery, which in turn react to the data." <https://www.bizjournals.com/denver/news/2018/03/26/golden-drone-company-raises-3-4-million.html>

Boeing bets on Australian satellite company working to connect 'hundreds of millions' of IoT devices Michael Sheetz | @thesheetztweetz



Co-founder and CEO of Myriota Alex Grant with a nanosatellite frame.

[Boeing's](#) venture capital arm invested outside the U.S. for the first time when it contributed to the latest funding round for Australian satellite company Myriota, the start-up announced Monday.

The \$15 million round was led by Australian venture capital firms Blue Sky and Main Sequence, with Boeing HorizonX Ventures, Singapore-based Singtel Innov8 and Right Click Capital joining the fundraising.

Myriota is developing small low-cost, low-power transmitters that connect directly to satellites in orbit. The technology is described in a statement by Boeing HorizonX Vice President Steve Nordlund as a "solution that simultaneously connects hundreds of millions" of devices to satellites. "We identified a gap in the market and that was a need for Internet of Things connectivity," David Haley, Myriota's chief technology officer, told CNBC.

<https://www.cnbc.com/2018/03/26/boeing-invests-in-australian-satellite-start-up-myriota-series-a.html>

Company wants to train commercial drone pilots at NH airport David Brooks | Mar 26, 2018

[ArgenTech Solutions](#), a nine-year-old firm based in Newmarket with operations overseas, has received permission from the city council to rent out a portion of one hangar, both to house drones and to set up a training facility. It still **needs permission** from the Federal Aviation Administration **to fly drones inside the airport's controlled airspace**.

The company wants to house a training program at the airport for "professional pilots, military or commercial operators." Drones would be flown "an estimated six to eight days per month." The Airport Advisory Committee approved the idea, as did the Concord City Council.



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ArgenTech declined to give details of its plans beyond this statement: "We are in the development stages of a program that would provide commercial UAS services and professional training opportunities to public safety agencies, as well as companies interested in entering the UAS market. The focus of these services will be the safe integration of UAS into the National Airspace System and aeronautical training for UAS operators."

<http://granitegeek.concordmonitor.com/2018/03/26/company-wants-to-train-commercial-drone-pilots-at-nh-airport/>

Which Continent Will Lead the \$20 Billion Drone Market in 2018? Miriam

McNabbon: March 26, 2018



A new drone market research report makes the largest and boldest prediction yet for the drone industry, which the report predicts will **exceed \$50 billion in the next 7 years**. Researchers expect that North America will lead the market this year.

"The North American region is estimated to lead the UAV market in 2018," say researchers.

"The US and Canada are key countries considered for market analysis in this region. Increase in defense expenditures of the US and Canada and the presence of major UAV manufacturers in North America are key factors contributing to the growth of the UAV market in this region."

It can be difficult to gauge the accuracy of drone market forecasts, partly because the forecasts vary dramatically in what sectors or elements of the industry they measure. This [report](#), produced by Research and Markets, measures the market for UAVs by segment. While comprehensive, it does not include the market in sensors, software, and platforms that also add to the economic potential of the industry.

While North America is named as the current leader, "The European and Latin American regions are expected to be the new revenue-generating markets for unmanned aerial vehicles," says the report. The report says that the military market will remain the largest segment in 2018, and that **fixed-wing UAVs will take the top spot** when measured by type.

<https://dronelife.com/2018/03/26/which-continent-will-lead-the-20-billion-drone-market-in-2018/>



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Lockheed Martin Unveils Drone Design MARY GRADY



Lockheed Martin has released concept images of a refueling drone it's working on for a U.S. Navy competition. The MQ-25 "Stingray" design is under development at the company's Skunk Works, and will compete with entries from [Boeing](#) and General Atomics. The Navy wants the drone to be capable of carrying 14,000 pounds of fuel to refuel combat jets, with a range of 500 NM, and it must be able to operate from an aircraft carrier. The contract is due to be awarded in September. The Navy has said it plans to buy the first four drones in 2023 and start to operate them from aircraft carriers in 2026. Ultimately, the Navy will operate a fleet of 72 of the refueling drones. <https://www.avweb.com/eletter/archives/101/3984-full.html?ET=avweb:e3984:2565185a:&st=email#230519>

NASA partners with Thales in push for drone airspace management 27 MARCH, 2018 SOURCE: FLIGHTGLOBAL.COM DAN THISDELL LONDON

NASA has formally brought Thales on board in its effort to develop an unmanned air vehicle traffic management system that can be handed over to the US Federal Aviation Administration in 2019. Under this Space Act Agreement, Thales will collaborate with NASA to research, develop, test and evaluate low-altitude UAV airspace control for flights below 400ft.

Thales is already working with other NASA partners at the FAA's test site, at Griffiss International airport in Rome, New York. It is supporting the FAA's System Wide Information Management and Low Altitude Authorization and Notification Capability programmes.

Olivier Rea, head of UTM solutions at Thales, says the agreement gives the company access to the US market as a "full provider". Since such deals are typically signed with US companies, he adds: "It's a big step for us." <https://www.flightglobal.com/news/articles/nasa-partners-with-thales-in-push-for-drone-airspace-447125/>

Air New Zealand calls for drone legislation after near miss 27 March 2018



Air New Zealand has called for tougher regulations on drone use after one came within just 5m (16ft) of a plane, narrowly avoiding a "serious incident".

The pilots of flight NZ92 from Tokyo spotted the drone as they were coming in to land at Auckland airport on Sunday. The drone came so close that the crew initially feared it would get sucked into the engine, said Air NZ. "The pilots spotted the drone at a point in the descent where it was not possible to take evasive action."



The incident is the second example of reckless drone use this month. Flight operations at Auckland airport were halted for 30 minutes on 6 March after a pilot reported a drone within controlled airspace.

<http://www.bbc.com/news/world-asia-43551373>

Catapult Forum and Expo

The Virginia Beach Department of Economic Development and the Office of Naval Research are sponsoring a two-day conference at the Sandler Center June 5-6, 2018. "Regional technology capabilities, emerging solutions and regional capacity will be showcased to Naval leaders." More information is at <http://www.catapultus.com/>

Raytheon Develops Unmanned Vehicle Swarm Technology 27 Mar 2018 | Caroline Rees



[Raytheon's](#) BBN Technologies has announced that, under DARPA's Offensive Swarm-Enabled Tactics program, it is developing technology to direct and control swarms of small, autonomous air and ground vehicles.

"Operators use speech or gestures to control the swarm. This is a tremendous advantage during operations," said Shane Clark, Ph.D. and principal investigator on the program. "The system provides sensor feeds and mission status indicators for complete situational awareness."

DARPA is inviting additional organizations to participate in OFFSET as "sprinters" through an open Broad Agency Announcement. Sprinters can create their own novel swarm tactics and the



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Raytheon BBN team will work with them to evaluate the tactics in simulation, and **possibly field them for live trials.**

In 2016, Raytheon, as part of the Office of Naval Research LOCUST program, conducted demonstrations that successfully **netted together 30 Coyote UAVs in a swarm.**

http://www.unmannedsystemstechnology.com/2018/03/raytheon-develops-unmanned-vehicle-swarm-technology/?utm_source=Unmanned+Systems+Technology+Newsletter&utm_campaign=631407e157-eBrief_2018_Mar_27&utm_medium=email&utm_term=0_6fc3c01e8d-631407e157-111778317

29Mar18

University of Michigan's outdoor drone lab takes flight Mike Householder | AP March 28



Matthew Romano, 1st year PhD Robotics student flies his drone inside the new M-Air netted autonomous aerial vehicle outdoor lab at the University of Michigan on Wednesday, March 28, 2018, in Ann Arbor, Mich. The facility can test drones in just about any kind of weather. (Clarence Tabb Jr./Detroit News via AP)

ANN ARBOR, Mich. — Researchers hosted a “demo day” on Wednesday, showing off the **\$800,000** four-story netted complex that’s known as “M-Air.”

The 50-foot-high, 9,600-square-foot facility “allows the students to come out and fly anything that fits in the net,” said aerospace engineering professor Ella Atkins.

Just three weeks old, M-Air features a pavilion with room for up to 25 people. Adjustable lighting will make M-Air usable in the evening. And, as Michigan Robotics director Jessy Grizzle points out, “We’ll be able to test drones in the wind and the rain and the snow and the sleet and the hail and the gloomy night.”

Outdoor drone flights on the campus are required to go through a formal university approval process due to safety concerns about interference with hospital helicopters and other aircraft. But flights inside the M-Air space are considered indoors and don’t require that level of approval. https://www.washingtonpost.com/national/higher-education/university-of-michigans-outdoor-drone-lab-takes-flight/2018/03/28/fe753056-32c0-11e8-b6bd-0084a1666987_story.html?utm_term=.fdf953050c3f



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Satellite Images Aided the Discovery of an Ancient Civilization Buried in the Amazon LAIGNEE BARRON March 28, 2018

Parts of the Amazon rainforest that were long believed to be almost uninhabited were actually home to a thriving, ancient civilization buried for centuries by jungle growth, according to a [new discovery](#) by archaeologists.

Today, remains dotting the fringes of the southern Amazon rim resemble little more than sporadic mounds sometimes encompassed by a shallow ditch. **But analysis of satellite images and drone footage** has revealed an extensive, pre-Colombian **settlement dating back to 1250–1500 A.D.**

To verify their findings, the team visited 24 field sites. Underneath the flora, they found pottery shards, charcoal and other fragments of a forgotten society. The study predicts hundreds more still-undiscovered sites may lie in the remote region.

The findings have upended assumptions about the inhabitance of the Amazon, including estimates that only 2 million people populated the entire basin, clustered mainly along the waterways. “Our research shows we need to re-evaluate the history of the Amazon,” de Souza said in [a statement](#). <http://time.com/5218270/amazonian-civilization-discovered-mato-grosso/>

Australian Police Down Rogue Drone at Gold Coast Games Jason Reagan March 27, 2018

A major Australian counter-drone company has announced **a win in the war against rogue drone flights** after police used an anti-UAS “gun” to down an errant flight over a major sporting event.



The Queensland Police Service used [DroneShield's DroneGun](#) during the recent [XXI Commonwealth Games](#) in Brisbane to neutralize a quadcopter breaching an aerial exclusion zone.

DroneGun discharges radio signals that can take control of a rogue drone, bringing the UAV to the gun user and disabling video capabilities.

The Gold Coast 2018 Commonwealth Games welcomes more than 6,600 athletes and team officials from 71 Commonwealth nations and territories to the Gold Coast and event cities



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Brisbane, Cairns and Townsville. <https://dronelife.com/2018/03/27/australian-police-rogue-drone-gold-coast-games/>

Drones Helping Uncover Zinc Deposits in Canadian Mining District Betsy Lillian

March 28, 2018



Callinex Mines Inc. has [completed](#) a 450 line-kilometer drone survey, providing high-resolution data over the mineral resources at the company's Nash Creek Project within the Bathurst Mining District of New Brunswick.

According to the Vancouver, British Columbia-based company, the Nash Creek deposit is related to structurally controlled, near-vertical faults that channeled fluids before dispersing laterally as flat-lying stratabound zinc-lead-silver mineralization. The **drone magnetic survey** was completed to help identify and delineate these near-vertical faults.

The Nash Creek Project covers several high-grade zinc occurrences over a 20-kilometer-long (approximately 12.4-mile-long) trend. This highly prospective land package, which has had very little exploration work completed, represents an opportunity for Callinex to discover additional zinc-rich deposits. The implementation of modern geophysical techniques, including drone magnetic, LIDAR and induced polarization surveys, along with conventional prospecting and soil sampling methods, **will assist in identifying the most prospective areas** for new discoveries, according to Callinex. https://unmanned-aerial.com/drones-helping-uncover-zinc-deposits-in-canadian-mining-district?utm_medium=email&utm_source=LNH+03-29-2018&utm_campaign=UAO+Latest+News+Headlines

30Mar18

AeroVironment upgrades Puma 3 UAS for challenging environments 29 MARCH 2018



US-based aircraft technology company AeroVironment has upgraded the Puma 3 unmanned aircraft system to be operational in more **challenging radio frequency environments**.

The airframe of the unmanned aircraft has been modified to support the operation of its i45 electro-optical / infrared sensor suite with signals intelligence payloads in harsh environments. It is also equipped with AeroVironment's latest digital data link with security upgrades that would enable the UAS to perform in challenging RF environments.



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AeroVironment vice-president David Sharpin said: "The new Puma 3 includes upgrades for operation in more rugged environments than before, improved ability to support advanced third-party payloads and software applications, and reliability in challenging electronic warfare / cyber environments where interference is prevalent." <https://www.airforce-technology.com/news/aerovironment-upgrades-puma-3-uas-challenging-environments/>